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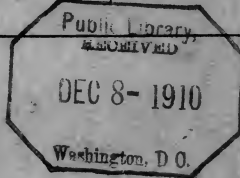
HOUSE OF REPRESENTATIVES

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No. 1009

ANNUAL REPORT OF THE  
COMMISSIONERS OF THE  
DISTRICT OF COLUMBIA  
YEAR ENDED JUNE 30, 1910

Vol. II

ENGINEER DEPARTMENT  
REPORTS



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1910



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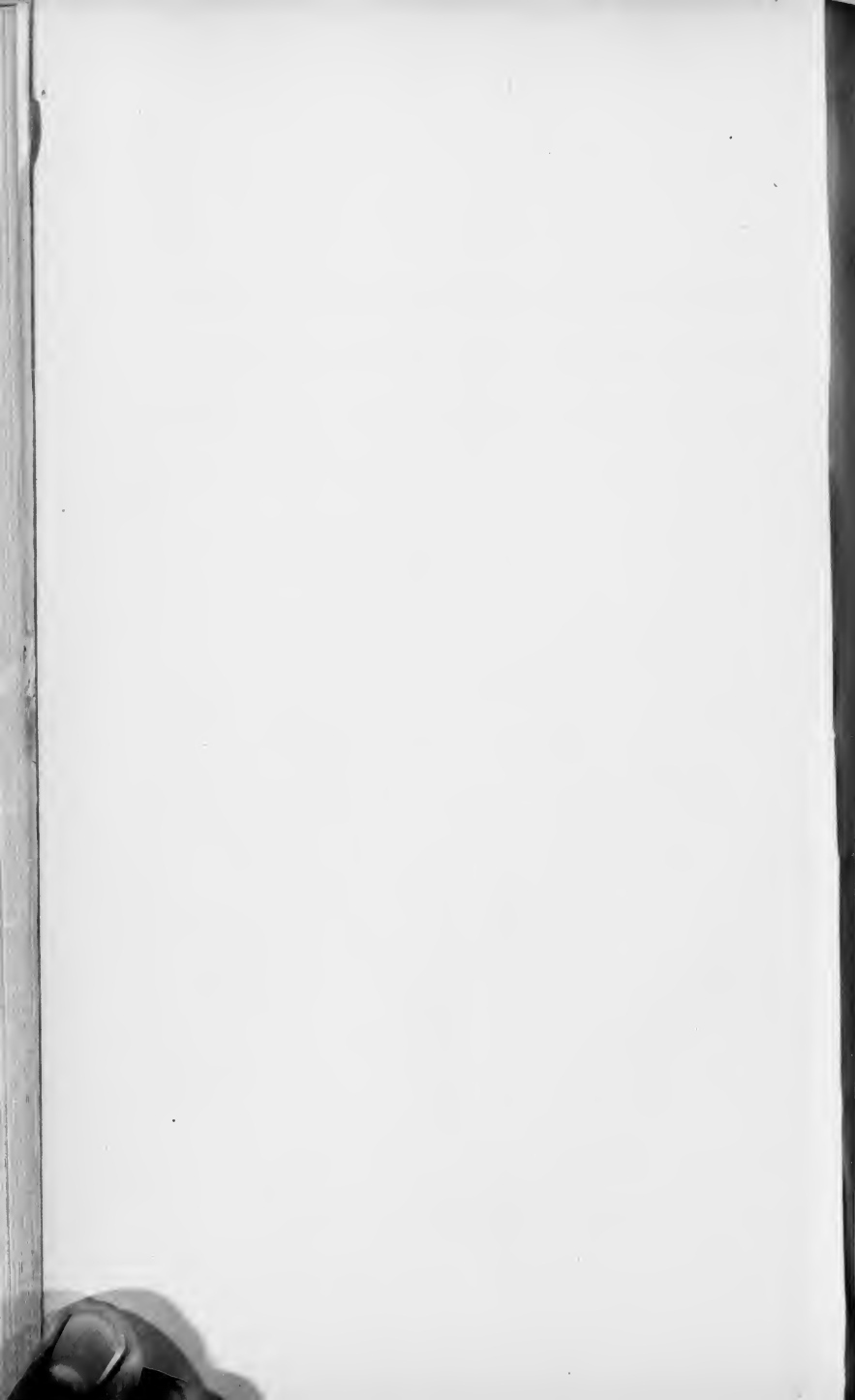
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EXTRACT FROM THE REPORT OF THE COMMISSIONERS OF THE DISTRICT OF COLUMBIA FOR THE FISCAL YEAR ENDED JUNE 30, 1910.

OFFICE OF THE COMMISSIONERS  
OF THE DISTRICT OF COLUMBIA,

Washington, December 5, 1910.

*To the Senate and House of Representatives of the United States of America in Congress assembled:*

The Commissioners of the District of Columbia herewith submit for the information of Congress, pursuant to the requirements of section 12 of an act providing a permanent form of government for the District of Columbia, approved June 11, 1878 (20 Stat. L., 108), a report of their official doings for the fiscal year ended June 30, 1910.

\* \* \* \* \*

ELIMINATION OF GRADE CROSSINGS, UNION STATION.

The work of eliminating grade crossings and the improvement of the Plaza in front of the new union railroad station provided for by acts of Congress approved February 12, 1901, and February 28, 1903, has practically been completed, and no further appropriation will be asked for in the next fiscal year.

The final work was the paving of the roadways in the Plaza and the intersecting streets and this has been accomplished. The paving used was sheet asphalt and asphalt block.

While the acts of Congress above referred to provided for the eliminating of grade crossings within the city limits, and in a small piece of territory lying to the north thereof, there were still left several grade crossings on much-traveled highways, such as Bennings road, Cedar street in Takoma Park, and Pennsylvania avenue extended. In the last District appropriation act authority was granted to eliminate the grade crossing at Cedar street, Takoma Park, by the construction of a suitable subway and bridge under the railroad tracks at this point. Plans for this work are now being prepared.

The commissioners have included in their estimates for the fiscal year 1912 an item of \$110,000 for the eliminating of the grade crossing at Bennings in a similar manner.

ROADWAY PAVEMENTS.

About \$460,000 was spent for paving new roadways and for repairing and repaving old roadway pavements. Of this amount \$300,000 was for resurfacing and repairs. In this paving work sheet asphalt and asphalt block were used. The prices paid for constructing new sheet asphalt and asphalt block pavements were as follows:

	Per square yard.
Laying sheet asphalt pavement .....	\$1. 45½
Laying vitrified brick gutters .....	1. 21
Laying asphalt block:	
4-inch asphalt block pavements—	
Within city limits .....	1. 65
Outside city limits .....	1. 80
5-inch asphalt block pavement within city limits .....	1. 80
3-inch asphalt block pavement on a 4-inch concrete base .....	2. 00

The prices for the current fiscal year (1911) are as follows:

	Per square yard.
For laying sheet asphalt pavement.....	\$1. 77
For laying vitrified block gutters.....	1. 40
For laying asphalt block pavements.....	1. 65

For resurfacing and repair work the prices are as follows:

For laying standard asphalt pavement, \$1.59 and \$1.63 per square yard, the price depending upon the character of the base.

For laying standard asphalt surface, 60 cents per square yard, measured on street, or 44 cents per cubic foot measured in cart.

For laying asphalt binder, 25 cents per cubic foot measured in cart.

There are a number of streets in the city paved with granite or Belgian blocks, which should be replaced with a smooth pavement. These pavements were laid many years ago under conditions differing from those existing to-day, and on account of their noisiness they are entirely unsuited to the streets on which they are laid. There is a provision contained in the District appropriation acts prohibiting the replacing of these block pavements with smoother pavements under the appropriation for paving streets and avenues, so that when they are recommended it is necessary to make a special item of them. In the estimates for the fiscal year 1912, the commissioners have included items for replacing two such streets, namely, Seventh street, between K and P streets NW., and E street, between Eleventh and Thirteenth streets NW. The commissioners believe that the replacing of the rough stone pavements on these streets with smooth asphalt pavement is in the interest of good administration. The blocks which would thereby be removed can be used economically in paving roadways in other portions of the District, where this would be a proper pavement.

The roadways of School street NW., between Irving and Lamont streets; Thirteenth street, between Euclid street and Park road; and the east side of Fourteenth street, from Florida avenue to Clifton street, were paved with a material known as asphaltic macadam. This is practically a combination of an asphalt and macadam roadway, and it is a pavement whose use is economical for appropriate street conditions. It is contemplated to continue the use of this type of pavement on other streets.

#### GRADE DAMAGES.

The work of the grade-damage claims commission in ascertaining the damages to private property caused by changes in the grade of streets and alleys due to the location of the Union Railroad station, and the location of grade crossings, is still in progress.

There were 133 claims for damages heard and determined, involving 170 pieces of real estate. In 92 of these cases damages were awarded land owners aggregating \$104,810. In 41 cases the commission awarded no damages. The commissioners expressed dissatisfaction with awards in 36 cases, whereupon the court set them aside and directed the marshal to impanel a jury. In 32 of these cases compromises were effected without jury trials, and the cases settled for \$11,375.50 less than the total awards of the commission.

During the year 67 petitions for damages were filed, making a total of 850 filed since the commission was organized.

The total amount paid out by the District in settlement of these grade damages, up to the close of the fiscal year, was \$403,243.10.

## STREET RAILWAYS.

Two new street railway lines were constructed during the year, one by the Baltimore and Washington Transit Company and the other by the Washington, Spa Spring and Greta Railroad Company.

The first-named road runs from Takoma Park via Third street, Kennedy street, and Colorado avenue to the intersection of Fourteenth street NW. While the tracks of this company have been laid, the road was not in operation within the time required in the charter.

The Washington, Spa Spring and Greta Railroad Company built a line of track along the Bladensburg road from the District line to Fifteenth and H streets NE. This road has recently been placed in operation, though all of the work of track construction and the improvement of the adjacent roadway, required by its charter, has not been entirely completed.

The cars of the Washington, Baltimore and Annapolis Company enter the District of Columbia over the lines of the Washington Railway and Electric Company to Fifteenth street and New York avenue, giving a through service between the center of the city and the cities of Baltimore and Annapolis. This company has no charter in the District of Columbia, but enters the District under a lease with the Washington Railway and Electric Company.

The commissioners again invite attention to the necessity of a central passenger station for interurban and other electric cars. It is believed that the construction of such a station should be required of the street railway companies as a matter of public convenience. A station similar to that at Indianapolis, Ind., is a sample of what is needed here. The structure should be located somewhere in the vicinity of New York avenue and Fifteenth street, and should be of dignified character, so as to constitute an ornament to the city.

## RESURFACING WORN-OUT PAVEMENTS.

The sum of \$300,000 was appropriated for resurfacing and repairs to asphalt pavements. These pavements aggregate nearly 3,000,000 square yards, with an average age of fourteen years and an extreme age of thirty years. The appropriations for their maintenance for the past and preceding years have been insufficient to prevent the average age from increasing. About twenty years represents the effective and economical life of such pavements. This matter was called to the attention of Congress at its last session, and the appropriation for this work during the fiscal year 1911 increased from \$300,000 to \$400,000. Four hundred and fifty thousand dollars has been requested for the next fiscal year. Unless at least \$400,000 is appropriated annually, the average age of all the pavements will continue to increase; that is to say, there will be a progressive deterioration of the street surfaces. In the expenditure of these funds the pavements are patched, until a time comes when the pavement is so worn out that it is no longer economical to use this method of repair. Then the street must be entirely resurfaced. This is very expensive on long stretches of streets, and consequently it is impossible with the funds allotted to keep the streets in good shape.

The use of the "burner method" in repair work, which was given its first trial last year, has been continued. In this work a large patented heating machine is used, the old surface being heated

through, the upper crust taken off, and new asphalt material placed and rolled. The old method used was to cut out the worn surface and replace it with new material. The new method is more economical when the thickness of the new surface used is quite small, averaging a little over an inch. If greater thickness is advisable, it has not been demonstrated that the use of the "heater method" is economical. Further time must be given the use of the "heater method" to demonstrate whether the surface obtained by the use of this method equals that obtained by the cutting-out method.

#### SIDEWALKS AND ALLEYS.

About \$200,000 was expended in paving sidewalks and alleys in all parts of the District of Columbia. Sidewalks are constructed of cement, and the work is done under contract. Alleys are paved with vitrified or asphalt block, and the work is done by day labor. The prices paid under contract for laying cement sidewalks during the fiscal year are as follows:

	Per square yard.
For large jobs adjoining paved streets.....	\$0. 94½
For large jobs adjoining unpaved streets, and for all small jobs.....	1. 20

For the present fiscal year (1911) the prices are as follows:

	Per square yard.
For large jobs adjoining paved streets.....	\$0. 97½
For large jobs adjoining unpaved streets, and for all small jobs.....	1. 19

There is a constant demand for the laying of cement sidewalks and the paving of alleys. In this work one-half of the cost is assessed against the abutting property.

#### COUNTY ROADS AND SUBURBAN STREETS.

About \$249,000 was expended for the construction and repair of county roads and suburban streets, of which \$100,000 was for repairs, and the balance for grading and macadamizing.

Experiments made during the year in the use of oil in connection with dust laying on county roads instead of sprinkling have been attended generally with good results, the most important of which is that the dust is kept down at all periods of the day instead of drying out at intervals, as is apt to happen when the roads are sprinkled. The expense for oiling is somewhat greater than that for the ordinary amount of watering, but it is believed the additional advantage named compensates for the increased expense. Furthermore, if the dust is held on the road, in combination with oil, wear is prevented to some extent and the life of the road increased. Experiments have been made in the use of emulsion oils, heavy oils, and granulated calcium chloride as dust layers, and heavy tar and asphaltic binders have also been employed. Good results in some cases have been obtained from the use of calcium chloride, which, by absorption of atmospheric moisture in ordinary weather, keeps the streets in a proper state of dampness without creating mud or permitting dust. This treatment is especially adapted to macadamized residential streets, and is well adapted for climates where the average amount of moisture in the air is considerable. The emulsion oil has been found well adapted to residential streets and also to macadamized roads with heavy travel. The heavy oils, such as those containing 40 to 50 per

cent asphalt, which are applied directly without emulsifying, seem better adapted to suburban roads, and particularly to those where there is little if any foot travel and a large amount of automobile travel. It will be necessary to provide in future road construction for oiling or tar or asphaltic binders wherever a heavy automobile traffic is to be expected, on account of the destructive effect of fast travel on ordinary macadam roads. The additional cost of bituminous binder will add about 25 per cent to the present cost of the construction of macadam roads. Oiling will cost from 3 to 7 cents per square yard per annum. Worn-out or rutty roads must be thoroughly repaired before oiling. When our roads are once in first-class condition and thoroughly oiled or otherwise treated they can be maintained at a high standard at comparatively small expense. For a number of years the expense of getting the roads in order will be considerable. The streets and roads of the District of Columbia which have not been paved are in a very wretched state, due to the automobile and to insufficient expenditures for maintenance.

#### BRIDGES.

The old Navy-Yard Bridge across the Anacostia River on the line of Eleventh street was removed. This bridge was replaced by the new Anacostia Bridge.

The bridge over Piney Branch on the line of Sixteenth street extended was completed, with the exception of the placing of four bronze castings in the form of tigers, which are to be placed at each side of the two entrances to the bridge. Contract has been let for this work.

An appropriation was made in the last District appropriation act for strengthening and stiffening the bridge across Rock Creek on the line of Calvert street, and plans are now being prepared to carry out this work. A careful examination of this bridge shows that in general it is of sufficient strength to carry all traffic over it, but with the expenditure of the above-named appropriation its strength will be increased and the vibrations which have been the cause of complaint will be greatly decreased.

The commissioners have included in their estimates for the fiscal year 1912 an appropriation of \$75,000 toward constructing a bridge across Rock Creek on the line of Q street, including the condemnation of the necessary land approaches thereto. The total cost of this bridge, including approaches, is estimated at \$275,000, and the appropriation asked is to start the work.

There are 160 bridges under the control of the District of Columbia, the approximate cost of which has been \$3,400,000.

#### SURVEYOR'S OFFICE.

The work in the office of the surveyor shows a decided increase over that of the previous year, as indicated by the following table.

	1909.	1910.
Surveys for private parties.....	4,070	4,533
Lots surveyed.....	2,277	2,854
Locating walls for buildings.....	1,948	2,422
New lots created.....	5,958	7,706

The fees received for work done for private parties amounted to \$22,891.80, while those of the previous year amounted to \$20,544.76, an increase of \$2,347.04.

This was due to increased activity in building operations and development of suburban property.

Twenty-two miles of new streets were created in connection with subdivisions, condemnations, and dedications.

In addition to the ordinary work of the surveyor's office a special survey was made of the sites for the workhouse at Occoquan, Va., which contains 1,154.7 acres, and for the reformatory at Accotink, Va., which contains 1,500 acres. A topographical survey was also made of the former site.

There is pending in Congress a bill to authorize the surveyor to designate old subdivisions, such as Meridian Hill, Mount Pleasant, Takoma Park, etc., by square numbers, such as exist in the city limits, and it is desirable that this legislation be enacted so that transfers can be made more easily of this property, and it can be better identified for taxation purposes.

Legislation is also recommended for the condemnation of all streets in the subdivision known as Barry Farm. The streets in this subdivision are owned by the adjacent property, and for that reason no improvements in the way of sewer, water, and roadways can be made on them.

#### STREET AND ALLEY EXTENSIONS.

The following street-extension measures were passed during the year:

Park place along west line of Soldiers' Home grounds.

Franklin street from Twenty-fourth street to Bladensburg road.

Newton place NW. from New Hampshire avenue to Georgia avenue, and to connect Newton place in Gass subdivision with Newton place in Whitney Close subdivision.

To acquire land in the vicinity of Connecticut Avenue Bridge for the extension of certain streets.

Twenty-third and R streets SE.

Military road NW., through parcels 87/17 and 87/16.

Fourth street, Congress Heights, with Fourth street, Washington Highlands.

Forty-first street from Harrison street north to Keokuk street.

Princeton place, from Georgia avenue to Rock Creek Church road.

Columbia road NW. through parcels 95/2-95/4 and 95/5.

Nineteenth street, from Belmont road to Biltmore street.

Massachusetts avenue, from Wisconsin avenue to the District line.

And the opening of a new road along the Anacostia River to Giesboro Point.

Condemnation cases were filed during the year to open alleys in squares 32, 2854, 2834, 2580, 1035, 2615, 2862, 2581, and 2583.

One of the most important street-extension measures was that authorizing the commissioners to condemn and acquire the fee simple title including the riparian rights of a strip of land for a roadway and park along the Anacostia River, from Monroe street to Giesboro Point.

In the report of Hugh T. Taggart, special counsel on the ownership of land and riparian rights along the Anacostia River, it was stated that the United States owned the bed of the river, and to the high-water line along the shores. It is important that this high-water line be accurately determined by a official survey, as it is receding rapidly. The estimated cost of making this survey is \$5,000, and the surveyor recommends an immediate appropriation for the purpose.



The value of having such a record is apparent, as it would prevent expensive law suits and much delay in the future development of the park system along the Eastern Branch.

#### TREES AND PARKING.

The number of trees planted on streets during the year was 4,030. This was an increase of 30 over the preceding year. The number of trees removed was 2,151, making a net increase of trees during the year of 1,879. The number of trees on streets, parking, and in school yards at the close of the fiscal year was 97,954. The mileage of streets planted with trees is 535.30, an increase during the year of about 6 miles. This mileage was figured on a basis of 352 trees per mile. The amount expended in the planting and care of trees was \$41,674.69.

The varieties of trees planted were ash, elm, ginkgo, linden, Norway and sugar maples, red, pin, and pyramidal oaks, sycamore, and tulip. Six thousand seven hundred and sixty-eight seedlings were planted in the nurseries.

One of the most interesting features of the work under this head during the year was the planting of trees around the Plaza at the Union Station and the improvements on the isles of safety on the Plaza. Thirty-two pin-oak trees were set out in the continuous space at the outer edge of the isles of safety and the continuous tree space was sown with grass.

Because of the limited funds appropriated for the care of trees and parking, it has not been possible effectually to keep down the growth of weeds in the parking on suburban streets. For the same reason the continuous tree spaces between the curb and sidewalk have not been given proper attention. These unpaved strips are provided for the express benefit of the trees and should be sowed in grass, both for the benefit of the trees and for the improved appearance of the streets which would thereby be created. Generally speaking, the amount appropriated for the care of trees and parking has been insufficient. It is the intention of the commissioners to ask for an increased appropriation for the next fiscal year. While the growth of the District has been continuous, and the extension of tree service has had to keep up with this growth, the sums appropriated for the planting and maintenance of trees has practically remained at the same figure for many years.

#### SEWERS.

The total length of sewers constructed during the year was about 26 miles. The total length of sewers in the District of Columbia on June 30, 1910, was 567.98 miles. Of this, 119.20 miles are main sewers and 448.78 miles are pipe sewers. The total cost of the sewerage system to June 30, 1910, was \$10,860,556.62. The cost of the sewage-disposal system to June 30, 1910, was \$4,095,630.70.

#### SUBURBAN SEWERS.

Nearly 10 miles of service sewers were constructed in the vicinity of Tenleytown, Reno, Chevy Chase, Cleveland Park, Petworth, Brightwood, Takoma Park, and Langdon. This was the largest

mileage of suburban service sewers constructed in any one year. The wide dispersion of population, due to the extension of street-railway facilities, has developed a large portion of the suburban territory of the District, and notwithstanding the considerable mileage of sewers constructed, as above referred to, the sewerage system has not kept pace with the growth of the District. Suburban conditions, as they once existed, practically no longer obtain, and a water-supply system and a sewer system are now practically a health requirement throughout the District. The number of dwellings without sewer connections has recently increased rather than diminished, notwithstanding the efforts to extend the sewer system to the greatest possible mileage. There are now 3,000 dwellings without available sewers, and several hundred with subsoil drains and other temporary expedients for taking care of house drainage.

As the natural water courses are filled by the grading of streets and the development of property, artificial water courses must be provided to take care of storm water, and this branch of the service is much in arrears.

#### SEWERAGE PUMPING STATION.

The sewerage pumping service was operated without interruption during the year. The sewage of substantially the entire District was delivered to the outlet on the Potomac River, about opposite Alexandria, Va.

The total amount of storm water pumped was 821,000,000 gallons and of sewage 25,049,683,000 gallons. The amount of coal used was 8,018,400 pounds.

#### STREAM POLLUTION.

Attention is again invited to the subject of the pollution of Rock Creek and the Anacostia River by sewage from suburban towns in the State of Maryland adjacent to the District of Columbia. The District is expending large sums of money for drainage works within its boundaries to exclude all sewage from these streams; at the same time just across the line in Maryland sewage is discharged in increasing volume from neighboring villages and towns. The only adequate solution of the problem of preventing this pollution is the extension of intercepting sewers up the valleys of these streams to connect with the sewerage systems of the Maryland towns. The only practicable method of handling the matter is to authorize by legislation the appointment of a sewage commission representing the District of Columbia and the State of Maryland, and the securing of the necessary appropriations to provide the intercepting sewers above referred to. On account of the division of jurisdiction, requiring joint federal and state legislation, the problem is exceedingly complex. It is important, however, that the matter be given consideration without further delay.

#### BUILDINGS.

The estimated value of building work during the year, not including the buildings of the United States Government, was \$16,431,946, which was an increase over the value of building work for the preceding year of \$1,646,887; the number of permits issued was 10,937, an

increase over the previous year of 1,032. The number of dwelling houses constructed was 2,023, a decrease of 147 over the preceding year; the number of apartment houses erected was 79, an increase of 1 over the preceding year. The number of business buildings erected was 320, an increase of 113 over the previous year. The total number of new buildings erected was 2,546, an increase of 136 over the previous year.

The distribution of the value of these improvements, including repairs to existing buildings, is as follows:

	Buildings erected.	Repairs made to existing buildings.
Northeast.....	\$1,140,596	\$81,342
Southeast.....	483,360	154,276
Northwest.....	4,367,986	1,758,747
Southwest.....	307,066	274,239
County.....	7,085,766	712,233
Total.....	13,384,774	2,980,837

Making a total for buildings erected and repairs of \$16,365,611.

There are estimated to be 54,245 brick buildings and 24,708 frame buildings in the District of Columbia. This is an increase during the year of 1,682 brick buildings and 864 frame buildings.

In the District appropriation act for the fiscal year 1910 the commissioners were directed to prescribe a schedule of fees for permits with the object of placing the building office on a self-supporting basis. This new schedule went into effect June 15, 1909, and the fees received during the year and deposited in the Treasury, through the collector of taxes, District of Columbia, amounted to \$33,978.82. The revenues during the preceding year amounted to \$10,644.

The appropriation for the office of the inspector of buildings for the fiscal year was \$29,230.

The building regulations which have been undergoing revision for the last three years were completed and promulgated on November 15, 1909.

An act of Congress approved June 1, 1910, changed the law regulating the height of buildings. The most important changes were a reduction in the permissible height of combustible buildings and an increase in the permissible height of fireproof buildings. It also provided that hotels and apartment and tenement houses three stories in height or over be of fireproof construction up to and including the main floor. Since the passage of this act there has been a material change for the better in the design of apartment houses, many of which are now constructed so as to be fireproof throughout.

#### INSPECTION OF PRIVATE BUILDINGS.

All private building construction in the District of Columbia is inspected under the direction of the inspector of buildings. The total number of inspections during the year was 63,026, an increase over the previous year of 7,031. This work is done by eight field inspectors, and each inspector makes an average of about 31 inspections daily, which limits the time of examination to about ten minutes

for each building. This is not believed to be sufficient, and it is believed that more time could be given to buildings if better means of transportation were furnished.

#### ELEVATORS.

The elevators in the District of Columbia are inspected by two inspectors under the direction of the inspector of buildings. They report the elevators to be entirely free from defective mechanism tending to cause accident, and that no serious accidents involving the loss of life have occurred during the year. Under the revised elevator regulations, the general construction of new elevators has been of a very high order. The policy inaugurated during the last year of holding weekly examinations for the licensing of elevator operators has been continued with splendid results in increased efficiency and safety to the public. An improvement in this regard could be made, however, by legislation authorizing the charging of fees and the issuance of license badges to operators.

#### INSPECTION OF BOILERS.

The number of steam boilers inspected by the inspector of boilers was 536. The compensation of this official is received from fees paid by the owners of the boilers. The total amount received from such fees during the year was \$2,450 and the expense of inspection \$466, leaving a net compensation to the inspector of \$1,984.

#### CONSTRUCTION OF MUNICIPAL BUILDINGS.

The work of constructing buildings for the District of Columbia, including school buildings, police stations, fire-engine houses, public-convenience stations, etc., and the making of repairs thereto, was placed by an act of Congress approved March 3, 1909, under an office thereby created designated as municipal architect. Prior to that time it was part of the duties of the inspector of buildings.

At the beginning of the year the municipal architect entered upon the discharge of this duty, with 28 buildings, additions, and other structures awaiting the preparation of plans, specifications, and contracts.

Actual construction has been started on all such buildings for which appropriations have been made with the exception of the third extension to the McKinley Manual Training School and the engine house on Pennsylvania avenue SE., near Minnesota avenue. Plans for these two buildings are now in course of preparation.

The District appropriation act for the fiscal year 1911 made all appropriations for school buildings immediately available upon the passage of the act, instead of awaiting the beginning of the fiscal year on July 1. This was an important change in previous practice and enabled the work to be started in procuring the sites and preparing plans with no loss of time. This provision should be extended to cover repairs to buildings also, especially of school buildings, as the vacation period begins in the latter part of June and extends to about the middle of September.

Of the 28 structures for which appropriations have been made, the plans and specifications for one-half were prepared entirely by

employees in this office. In the other 14 buildings, private architects were employed to assist the municipal architect in the preparation of plans and specifications, for which they received a commission of 3½ per cent. It is impracticable with the force now provided for by law for the office of the municipal architect to have all of the work of designing the buildings done in that office.

An innovation in the plans for school buildings has been made during the year in having these buildings designed with flat roofs and parapet walls so that they may be used for open-air classes.

The total cost of buildings under construction during the year was \$920,714. The following table gives a list of municipal buildings completed during the year or in course of construction:

Building, name, number, description, and location.	Cost.	Contents.	Cost per cubic foot.
		<i>Cubic feet.</i>	<i>Cents.</i>
Convenience station No. 3, underground, Ninth and K streets nw .....	\$18,632	46,662	39.9
Monroe, addition, Columbia road near Sherman avenue.....	27,042	228,240	16.2
Engine house No. 23, G street near Twenty-second street nw.....	27,300	119,940	22.7
Convenience station No. 5, brick and tile, Dupont Circle.....	11,090	26,380	42.03
Potomac, semifiireproof, Tenth and E streets sw .....	58,742	388,176	15.13
Eaton, semifiireproof, Cleveland Park.....	58,850	336,204	17.46
Benning, addition, brick, Benning, D. C.....	30,724	145,168	21.1
Chevy Chase, addition, brick, Chevy Chase, D. C.....	33,220	200,108	16.5
Lovejoy, addition, brick, Twelfth and D streets ne.....	31,000	171,050	18.1
Western High, addition, brick, Thirty-fifth and T streets nw.....	70,200	373,500	19.2
Brookland, 2-room brick, Bunker Hill road.....	23,661	186,228	12.7
Engine house No. 2, semifiireproof, Twelfth street, near G street.....	39,240	221,860	17.6

Plans for the following buildings, for which appropriations have been made, are now being prepared under the supervision of the municipal architect:

Eight-room school building, Farragut street, between Thirteenth and Fourteenth streets NW., plans completed.

Twelve-room school building, Eighth and T streets NW., plans completed.

Third extension to McKinley Manual Training School, plans completed.

Chemical engine house, Randle Highlands, plans completed.

Eight-room school building, Randle Highlands, plans completed.

Central heating plant, M Street High, Simmons, and Douglass schools, plans completed.

Normal School No. 1, Eleventh and Harvard streets NW., plans started.

Six-room school building at Ivy City, plans started.

Architects have been commissioned to work in conjunction with the municipal architect in the preparation of plans for the following buildings:

Addition to the Armstrong Manual Training School.

Manual training school on the grounds of the Cardozo School.

Six-room manual training school on the site of the old High Street School, Thirty-third street and Wisconsin avenue.

Engine house No. 24, at the intersection of Georgia and New Hampshire avenues NW.

#### REPAIRS TO MUNICIPAL BUILDINGS.

All municipal buildings are kept in repair by the superintendent of repairs, under the direction of the municipal architect.

For school repairs \$75,000 was appropriated and, in addition, \$60,000 for fire protection in public-school buildings. In expending all appropriations for repairs to school buildings it is the endeavor, first, to make such repairs as are necessary to keep the buildings from

deteriorating and, afterwards, to make improvements and changes requested by the board of education as far as the funds will permit. The appropriation for fire protection was expended in building fireproof stairways and fireproofing over furnaces.

Five thousand dollars was appropriated for deep wells in school yards in the suburban sections, and this amount was expended in digging wells for eight schools.

For repairs and improvements for engine houses \$10,000 was appropriated and for repairs to police stations \$5,500. These appropriations were practically all expended. In addition, the superintendent of repairs expended in repairing plumbing in the public schools \$6,878.53.

#### ELECTRICAL DEPARTMENT.

One thousand two hundred and ninety new street lamps were established during the year and 530 lamps discontinued, making the net increase during the year 760 lamps. The total number of lamps in service is 14,689, made up as follows:

Gas mantle lamps.....	9,090
Flat-flame gas lamps.....	16
Naphtha lamps.....	1,224
Electric incandescent lamps.....	3,831
Street-designation gas lamps.....	499
Street-designation electric lamps.....	29
	<hr/>
	528
	<hr/>
	14,689

Nine and seventy-nine one-hundredths miles of cable were installed during the year and 2.94 miles of cable withdrawn.

The total amount of cable in service at the end of the year was 104.60 miles.

Forty-one new fire-alarm boxes were placed in service. The total number at the end of the year was 500. The number of fire alarms received and transmitted during the year was 1,145, of which 62 were false.

The total number of patrol boxes in service at the end of the year was 320.

The total number of telephone, telegraph, and electric light and trolley poles in the District of Columbia is 14,962. The work of electric wiring inspection during the year shows an increase of nearly 100 per cent in the number of premises inspected and 25 per cent in the number of inspections.

The fees paid for permits and certificates amounted to \$5,172.

#### GAS AND METER INSPECTION.

Under the office of the inspector of gas and meters 8,003 gas meters were tested, and the amount of fees collected was \$3,192.90. It is provided by law that the illuminating power of gas furnished by any gas light company shall be equal to 22 candles, and that the gas shall not contain more than 20 grains of sulphur in 100 cubic feet, nor more than 5 grains of ammonia in 100 cubic feet, and shall be free from hydrogen sulphide. The gas supplied by the Georgetown Gas Light Company is a coal gas enriched with oil gas, while that supplied by the Washington Gas Light Company is a mixture of coal gas and

carbureted water gas. The gas is tested at three stations. In the southeast station tests of the gas supplied by the Washington Gas Light Company gave a mean of 23.1 candles, with a maximum of 28.93 candles and a minimum of 18.63 candles. At the central station the mean was 22.32 candles, maximum 25.9 candles, and the minimum 19.53 candles. At the northwest station the mean was 23.61 candles, maximum 27.29 candles, and the minimum 20.93 candles. On forty-four days the illuminating power was below legal requirements at one station and on thirteen days at two stations, and on one day it was below at all three stations. On most of these days the lowest result obtained was between 21 and 22 candles.

At no time during the year did the tests show the presence of more than the legal amount of ammonia or sulphide in the gas supplied by the Washington Gas Light Company.

Hydrogen sulphide was found present on one day in tests at the three stations and on four other days in the test at some one station.

Tests of the gas furnished by the Georgetown Gas Light Company showed the mean to be 22.92 candles, maximum 27.31 candles, and minimum 17.94 candles. On twenty-nine days during the year the candlepower was below the legal requirement, the results running between 21 and 22 candles.

On fourteen days excess in the amount of ammonia over the legal limit was found. At no time during the year did the amount of sulphide found in this gas exceed the legal limit and no hydrogen sulphide was found in the gas.

#### PERMITS.

The permits for various purposes other than building permits issued during the year amount to 22,862, an increase of 1,774 over the previous year. The fees paid for these permits amounted to \$13,838.

#### AUTOMOBILE BOARD.

The automobile board examined 2,329 applicants to operate motor vehicles. Of this number, 2,262 were granted permits, including 274 for electric vehicles, 1,686 for gasoline vehicles, 92 for steam vehicles, and 213 for motor cycles. Temporary permits were granted to 115 applicants. Duplicate permits were issued to 115 operators.

Numbers were assigned to 186 electric vehicles, 1,698 gasoline vehicles, 62 steam vehicles, and 430 motor cycles. The fees charged for these tags were \$2 each. In addition there were also issued tags for 11 motor vehicles and 2 motor cycles belonging to the United States and the District of Columbia for which no fees were paid.

The fees received for identification tags amounted to \$4,752, and for operators' permits \$1,292, a total of \$6,044. The total amount collected from the same source during the last fiscal year was \$3,368.

#### PLUMBING AND PLUMBING INSPECTION.

During the year the plumbing office made 44,953 inspections, which was an increase of 5,549 over the number made during the previous year.

A number of amendments were made to the plumbing regulations during the year, with the object of making the practice of plumbing

uniform, and to prevent complaints on the part of the public and plumbers.

This office also has charge of the installation of plumbing in private residences under the compulsory-drainage act, upon the failure of the owner of the premises, after notice, to do the work. There were 30 cases of this character on hand at the beginning of the fiscal year, and 45 cases were received during the year, making a total of 75. In 27 cases the work was done by the owner, and 17 cases by the District of Columbia, and the cost assessed against the property. The other cases are pending. The amount expended in the work by the District was about \$1,500.

#### PLUMBING IN PUBLIC SCHOOLS.

The appropriation of \$50,000 made for repairs to and changes in the plumbing of the older school buildings so as to bring them up to modern sanitary requirements was practically all expended. The plumbing in twelve school buildings was generally remodeled. This work is not yet finished, as many of the older school buildings still contain the old style insanitary plumbing, and an additional appropriation will be necessary.

The sum of \$35,000 is necessary for this work during the next fiscal year, and it is intended to expend it in remodeling the plumbing completely in five buildings and to make minor repairs to the plumbing in other buildings.

#### PUBLIC-CONVENIENCE STATIONS.

The two public-convenience stations located at Seventh street and Pennsylvania avenue and Thirteenth street and Pennsylvania avenue were in operation during the year, and the new station in course of construction at Ninth and K streets NW., will be opened shortly. The appropriation made last year for a public-convenience station at Ninth and F streets NW. was canceled by act of Congress, as was also an appropriation for a convenience station in the vicinity of Dupont Circle. Objection was made to the location of these two stations, which was the cause of abandoning the work of construction. There is a demand for the location of public-convenience stations at Fifteenth and New York avenue NW.; at Thirty-second and M streets NW.; and on Pennsylvania avenue near the Peace Monument. The commissioners believe that at least one such station should be built each year.

The total number of patrons at the two stations now in operation was 1,398,085. These stations have free compartments and pay compartments. The fees received from the pay compartments amounted to \$1,766.71, an increase of about \$600 over those received for the last fiscal year.

#### PUBLIC BATHS.

Attention is invited to the necessity for the establishment of public bathing places in the city. Free public baths exist in a number of other cities, and the commissioners believe that Washington should not be behindhand in this respect. There is a large class of people in the city who have no bathing facilities at their homes, and it is this class which the public baths would reach.



## CONDEMNATION OF INSANITARY BUILDINGS.

The board for the condemnation of insanitary buildings examined 409 buildings, and issued orders requiring 222 to be demolished and 284 repaired. Of those ordered demolished and repaired, some had been examined in the preceding year.

The total number of buildings examined by the board since its creation on May 1, 1906, to June 30, 1910, was 1,796, of which 504 were in alleys and 1,292 in streets. Of this number 1,008 were ordered demolished and 676 repaired. Of those ordered demolished, 655 were in streets and 343 in alleys, and of those repaired, 432 were in streets and 244 in alleys. The pending cases number 112, of which 81 are in streets and 31 in alleys.

The number of tenants in streets and alleys required to secure other quarters through action of the board during the year was 754. The total number since the creation of the board was 2,922.

The number of tenants in streets and alleys benefited by repairs during the year was 831, and the total number since the creation of the board, 2,431.

The total assessed valuation of the improvements removed from streets and alleys during the year was \$36,700, which was the value of the structures and not of the land. The rental value of these houses was \$16,666.88.

The removal of these insanitary buildings has been accomplished by action of the owners, and without charge against the appropriation. Eight cases were required to be taken into court, and two cases are pending in court.

Of the tenants affected by the removal of condemned buildings during the year, 456 were white and 31 colored. Many of these tenants have removed, and others are removing, to the suburbs in the outlying sections of the District and adjacent portions of Maryland and Virginia, where they rent or purchase cheap homes with fairly large-sized lots.

The majority of houses located in alleys at the present time are of such character structurally that they are not condemnable under the law, but are required to be kept in repair under notice from the board.

The work of the board during the year has been of great value in ridding the city of an undesirable class of houses. Not all of such houses can be removed. There are many unsightly houses still existing in many parts of the District which would appear to be subject to condemnation under the law, but which are in fact not condemnable, as they are properly lighted, are dry, have tight roofs, and ample heating, ventilating, and drainage facilities.

## PLAYGROUND AND RECREATION CENTER—WILLOW TREE ALLEY.

The commissioners have included in their estimates for the fiscal year 1912 an item of \$125,000 for the purchase of the interior of square 534, lying between B and C, Third and Four-and-a-half streets SW., including what is popularly known as "Willow Tree alley." This is an inhabited alley, containing 68 structures, occupied by 406 white and colored inhabitants. The conditions there are shown by the records of the police and health departments to be such

that its use as a place of habitation should no longer be permitted. It is the intention of the commissioners to acquire by condemnation such an amount of land in addition to that covered by the alley, as may be necessary for the development of an interior playground and recreation center, and to erect therein a substantial structure to afford bathing and playground facilities.

The object in view is to begin the eradication of the evils arising from these densely inhabited alleys in central portions of the city, and at the same time to aid the social and moral uplift of the inhabitants in the neighborhood. A number of such inhabited alleys exist within the city, and this alley has been selected for the purpose, as being in the most immediate need of corrective measures.

This measure has been recommended by the board for the condemnation of insanitary buildings, created by act of Congress. This board is engaged in an endeavor to compel the removal of insanitary buildings from the District of Columbia, especially those in inhabited alleys. Unfortunately the buildings in this alley are of so substantial a nature that they can not be condemned under the law providing for the condemnation of insanitary buildings, so that the only method of securing their removal is through acquiring the land on which they are built, which the above item contemplates. The inhabitants who would be compelled to remove from the alley can find more sanitary conditions and generally improved surroundings in the suburban portions of the District. The reports of the board indicate that when insanitary buildings are condemned the greater portion of the inhabitants find new homes in such suburban sections, where their moral and social conditions are much improved.

#### ANACOSTIA RIVER AND FLATS.

In pursuance of an appropriation contained in the District appropriation act approved March 3, 1909, the commissioners employed special counsel to investigate and determine the ownership of the land and riparian rights along the Anacostia River. The counsel employed was Mr. Hugh T. Taggart, and he made his report under date of February 24, 1910. This report was forwarded to Congress by the commissioners under date of March 26, 1910, and was printed as Senate Document No. 462, Sixty-first Congress, second session.

The conclusions reached by Mr. Taggart from his investigations on the matter were as follows:

1. That the United States, under the Constitution and the cession from Maryland, is vested, as sovereign, with absolute title and dominion in and over the space between high-water mark on each side of the Anacostia River, and comprising the shores and bed of the stream.
2. That the United States holds such title and dominion in trust for the public purposes of navigation and fishery and for such other purposes as may conduce to the general welfare of the people, as to which Congress, as the representative of the people, is the sole judge.
3. That as against the United States in the execution of such trusts, riparian owners are invested with no rights.
4. That so long as the Government confines its operations in any scheme of improvement to the space aforesaid it incurs no liability under the fifth amendment to the Constitution, which requires that "private property shall not be taken for public use without just compensation," and that land reclaimed through such improvement will belong absolutely to the United States.

The above statement applies to that portion of the river not included in the immediate frontage of the city of Washington upon it. The special features of that frontage require separate consideration.

The commissioners have included in their estimates for the fiscal year 1912 an item asking for the sum of \$200,000 toward improving the Anacostia River and flats from the Pennsylvania Avenue Bridge to the District line. It is proposed that this money be expended under the supervision of the Chief of Engineers, U. S. Army, and in accordance with plans approved by an engineer board to consist of the engineer commissioner of the District of Columbia, the officer in charge of public buildings and grounds, and the engineer officer in charge of Potomac River improvements.

Appropriations have already been made and work is now in progress for dredging and reclaiming the flats along that portion of the Anacostia River from the Potomac River to the navy-yard or Anacostia Bridge. It is assumed that this latter improvement will be continued to the Pennsylvania Avenue Bridge, which is the head of navigation on this stream, under appropriations for rivers and harbors, and the estimate above referred to is for continuing the improvement of this river and the flats above that point. It is believed that the work above the Pennsylvania Avenue Bridge can be done more economically if it is done in conjunction with the work now being done under the direction of the Chief of Engineers on the lower part of the river.

#### HARBOR FRONT.

The total amount received from rentals of wharf property in the District of Columbia under the charge of the commissioners was \$16,941.35, divided as follows:

Potomac River front.....	\$14, 873. 00
Anacostia River front.....	503. 10
James Creek Canal.....	1, 565. 25

The actual water frontage in the District of Columbia devoted to commerce is about 2 miles. The total available water frontage practicable of commercial development is about 18 miles, including the frontage set apart for parks and purposes of the United States Government, amounting to about 8 miles.

The most important wharf property under lease is that along the Washington channel, slightly less than a mile in length, the longest-term lease expiring in 1913. This frontage is in much need of improvement.

The frontage along the Anacostia River is largely undeveloped owing to the uncertainty regarding the ownership of abutting land and riparian rights. Investigations are now in progress to determine the rights of the United States to this frontage.

The James Creek Canal, which formerly extended from G street to the Anacostia River, has been filled to about N street. From N street to P street the banks of the canal are under lease. From P street to the Anacostia River the canal extends on one side along the grounds of the War College and Engineer School. It has been suggested to the commissioners that it might be advisable to fill this canal entirely and build over it a street or boulevard leading from South Capitol street to the Anacostia River, and this matter is now under consideration.

The wharves along the Georgetown channel of the Potomac River are under private control, with the exception of the foot of streets.

A steam railroad has recently been extended along Water street, and it is believed that this frontage will become much more commercially valuable by reason of this improvement.

The commissioners again call attention to their report on the improvement of the water front, which was forwarded to Congress May 23, 1908, and printed as Senate Document No. 519, Sixtieth Congress, first session. No appropriation has been made as recommended in this report for the improvement of the harbor front, but it is the intention of the commissioners at an early date to make definite recommendation along this line.

#### PARKS.

Legislation was enacted at the last Congress authorizing the Secretary of the Interior to acquire for a public park the land included between Euclid street, Fifteenth street, W street, and Sixteenth street extended, in that portion of the District formerly known as Meridian Hill, this tract containing about 437,000 square feet. In the same law the commissioners were directed to acquire for a park a tract of land known as Montrose, in Georgetown Heights, containing about 16 acres. No appropriations for these parks were made.

The commissioners believe that additional parks and parkways should be acquired in the District of Columbia, and they recommended legislation last year to authorize the appointment of a commission to look into this matter, with the object of securing information and estimates upon which appropriations for parks could be based. The bill introduced for this purpose, however, failed of enactment, and it is the intention of the commissioners to again request the passage of such legislation. They believe that the present time is not too soon to prepare plans and surveys for locating such parks in accordance with some definite system whereby their acquisition can be extended over a period of years. Land in the District of Columbia is being rapidly developed, and unless these parks are selected in the near future the cost of obtaining them later will be almost prohibitive.

#### ROCK CREEK PARK.

The appropriation for the care and maintenance of the park during the year was \$15,000, and authority was granted the board of control of Rock Creek Park, consisting of the Commissioners and the Chief of Engineers, U. S. Army, to purchase a small parcel of land, a little less than 1 acre in extent adjoining the northern boundary of the park, for a sum not to exceed \$400.

Owing to the difficulty encountered in securing a good title to the small parcel of land above referred to, it was found impracticable to acquire it. The appropriation was therefore entirely spent in the care and maintenance of the roads, paths, and grounds, but little new work being undertaken during the year.

A contract was let for a stone and concrete arch, 16-foot span, over a stream crossing Beach driveway above the upper ford, at a cost of \$996.

For the fiscal year 1912 the sum of \$20,000 will be asked for the care and improvement of the park. With the additional amount it is proposed to build a road into the park from Sixteenth street

extended, near Kennedy street, and to oil a part of the roads in the park where sprinkling is difficult. It is also intended, when funds permit, to extend the system of macadamized roads, to build shelters, and to gradually open to general use the portion of the park above the Military road. A proposition was submitted to the board of control last year by the Capital Traction Company to extend a spur from their Fourteenth street line along Kennedy street into the park, in order to give street-railway access to the park. This proposition was submitted at the suggestion of the board of control, and Congress was requested to authorize its construction. The authority, however, was not granted. The commissioners believe that some means should be adopted to make this large park more accessible to the general public. By the construction of roadways and bridle paths ready access can be obtained to all parts of the park by that portion of the public which uses horses and vehicles. The greater portion of the public, however, does not make such use of the reservation as is desirable on account of inadequate facilities for getting to it.

#### WATER MAINS.

Twenty-two miles of water mains were laid during the year, making the total length at the end of the year 500 miles.

Two hundred and twelve additional fire hydrants, 10 public hydrants, 6 horse fountains, and 3 drinking fountains were erected during the year; and 38 fire hydrants and 22 public hydrants were abandoned. The total number in service is 2,716 fire hydrants, 229 public hydrants, and 4 drinking fountains.

There are also in service 11 shallow wells and 30 deep wells.

#### EXTENSION OF WATER MAINS TO SUBURBAN SECTIONS.

Two important trunk water mains 20 inches in diameter were laid to afford water service to suburban sections. The first provided water service for Brightwood, Petworth, and Takoma Park, and was 9,357 feet in length. The second completed a 20-inch main from Reno reservoir to Chevy Chase circle. This was 6,218 feet in length. An extension was made from this line to supply the subdivision of Pinehurst.

In the last District appropriation act a special appropriation of \$50,000 was made toward the extension of trunk water mains to Congress Heights and Twining City, and a special appropriation of \$24,000 was also made to extend the water service to the subdivision of Potomac Heights.

Special appropriations have been asked in the estimates for 1912 to complete the extension of the trunk water mains to Congress Heights and Twining City (\$56,000) and for the extension of trunk water main to Benning (\$45,100).

The water-service system is being extended to the suburban sections as the funds of the water department will permit.

#### PREVENTION OF WATER WASTE.

Notable results were obtained during the year in decreasing the waste of water. The mean total rate of consumption for the year was 59,200,000 gallons, against 61,200,000 gallons for the preceding

year and 64,500,000 in the year 1908. This reduced rate is traceable to the stoppage of underground leaks, the increased use of water meters, and careful house inspection to discover and prevent leaky fixtures.

The underground leaks found and repaired during the year aggregated 6,354,190 gallons per day, with a saving at the rate charged for water, 4 cents per thousand gallons, of \$93,000.

#### WATER METERS.

One thousand three hundred and twenty-five water meters were installed by the water department in private residences during the year and 43 were installed in municipal buildings. Seventy-three water meters were installed by private individuals in establishments other than private residences, making the total number of water meters installed during the year 1,447. Eighty-six water meters were discontinued. The total number of water meters now in use is 15,940. The total number of water services is 63,472. The percentage of water services metered is 25. The average cost of installing water meters by the District of Columbia is \$15.07 each, of which \$8 is the cost of the meter and \$7.07 the cost of installation. The average annual cost per meter for repairs is 19 cents. The rate charged for water on metered service is 3 cents per 100 cubic feet, with a minimum rate to all consumers of \$4.50 per annum. The average annual payment for private residences where meters were installed by the District of Columbia is \$4.76. Water rent bills are delivered to householders annually at the minimum rate of \$4.50 per annum, which allows the use of 15,000 cubic feet, or 112,200 gallons of water, and if on actual measurement the water is found to have been used in excess of this rate, a bill is rendered for such excess.

On the water services which are not metered, water for domestic purposes is charged for according to stories and frontage. For premises of two stories, with a front width of 16 feet or less, the minimum rate is \$4.50 per annum; for each additional front foot or fraction thereof 30 cents is charged. For each additional story, one-third of the charges as computed above is added. For business premises, not metered, rates vary from \$1 to \$25 per annum. Where the rate is in excess of \$25, a meter is required to be installed at the expense of the consumer.

#### WATER REVENUES.

During the year 2,811 additional buildings were connected with the public water system. The revenues for the year were \$600,184.36. This sum is an increase over the revenues of the previous year of \$27,431.62. These revenues are made up from assessments levied for water mains, water rents, sales of water-tap and stop-cock boxes, charges for water for building purposes, and sale of old material.

Water is furnished free of charge to orphan asylums, hospitals, schools, and charitable institutions, under authority of law to the extent of 15,846,600 gallons.

#### IMPROVED TRANSPORTATION.

Within the last two years appropriations have been provided for the purchase of motor vehicles for inspection and motor trucks for

transportation in the sewer and water departments, and in the surveyor's office, and the office of construction and repair of county roads. The added efficiency given to these offices by reason of this modern method of transportation fully justifies the increase of the number of such vehicles, both in these offices and in other branches of the service.

#### PLANS FOR FUTURE IMPROVEMENTS.

In their last annual report the commissioners called attention to the fact that in preparing their estimates they were limited by law to a figure double the amount of the estimated revenues. They stated that they found this method of preparing the estimates was sufficient to meet all current needs in accordance with reasonable standards of efficiency, but would not adequately provide for carrying out large projects of permanent improvement. They also stated that in order to carry on such projects by means of appropriations from year to year, a definite method of financing them would have to be provided, and at the same time provision would have to be made for paying off the indebtedness of the District, and it was their intention to draft legislation designed to cover these points.

In pursuance of this intention a bill was drafted by the commissioners and introduced in Congress as House Bill No. 13474 and Senate Bill No. 3260. These bills are now pending.

The commissioners recommend the passage of this measure, and in support of this recommendation invite attention to their arguments presented before the House and Senate committees on the District of Columbia. These arguments have been printed as public documents.

Very respectfully,

CUNO H. RUDOLPH,  
JOHN A. JOHNSTON,  
WILLIAM V. JUDSON,

*Commissioners of the District of Columbia.*





# REPORT OF THE OPERATIONS OF THE ENGINEER DEPARTMENT.

## SURFACE DIVISION.

Capt. MARK BROOKE,

*Corps of Engineers, U. S. Army, Assistant to the Engineer Commissioner, in charge.*

HIGHWAYS (STREETS, ROADS, BRIDGES, ETC.) .....	C. B. HUNT, <i>Engineer of Highways.</i>
Sidewalks and alleys .....	H. N. MOSS, <i>Superintendent of Streets.</i>
Construction and maintenance of county roads .....	L. R. GRABILL, <i>Superintendent of County Roads.</i>
Construction and care of bridges .....	T. J. C. BAILY, Jr., <i>Engineer of Bridges.</i>
ASPHALTS AND CEMENTS .....	J. O. HARGROVE, <i>Inspector of Asphalts and Cements.</i>
SURVEYOR'S OFFICE (including street extensions) .....	M. C. HAZEN, <i>Surveyor.</i>
TREES AND PARKING .....	TRUEMAN LANHAM, <i>Superintendent of Trees and Parking.</i>
GRADE DAMAGES .....	A. L. SINCLAIR, <i>Special Assistant Counsel.</i>

## REPORT OF THE ASSISTANT IN CHARGE.

OFFICE OF THE ENGINEER COMMISSIONER  
OF THE DISTRICT OF COLUMBIA,  
*Washington, October 12, 1910.*

MAJOR: I have the honor to transmit herewith annual reports, giving in detail the operations during the fiscal year ended June 30, 1910, of the surface division, the surveyor's office, including the office of street extensions, the office of the inspector of asphalts and cements, the office of superintendent of trees and parking, and the special assistant corporation counsel in charge of grade damages. In the report of the surface division are included the reports of the engineer of highways, the superintendent of streets, the superintendent of roads, and the engineer of bridges. This division has been under my charge since July 2, 1910; previous to that time it was under the charge of Capt. Edward M. Markham, Corps of Engineers, U. S. Army.

Very respectfully,

MARK BROOKE,  
*Captain, Corps of Engineers, U. S. Army,*  
*Assistant to the Engineer Commissioner.*

Maj. WM. V. JUDSON,  
*Corps of Engineers, U. S. Army,*  
*Engineer Commissioner, District of Columbia.*

## REPORT OF THE ENGINEER OF HIGHWAYS.

WASHINGTON, D. C., *October 3, 1910.*

CAPTAIN: I have the honor to submit the following report of the operation of the surface division of the engineer department of the District of Columbia for the fiscal year ended June 30, 1910.

The total amount of funds appropriated by Congress and deposited by corporations and others for disbursement by the surface division during the fiscal year ended June 30, 1910, aggregated about \$1,330,000, of which about \$200,000 was for paving sidewalks and alleys in all parts of the District of Columbia; \$460,000 was for paving new roadways and for repairing and repaving old roadway pavements; about \$249,000 was

for construction and repair of suburban streets and county roads, exclusive of sheet asphalt and asphalt block roadways; \$15,000 for grading streets and alleys; about \$116,000 for the maintenance and construction of all bridges in the District; about \$150,000 in connection with the elimination of grade crossings; while approximately \$140,000 was spent in repairing pavements disturbed by excavations on account of other branches of the District government and by various corporations and plumbers.

*Summary of work done under appropriations for "Improvements and repairs" and "Elimination of grade crossings" for year ending June 30, 1910.*

Character of work.	Improvement and repairs.			Elimination of grade crossings.	Total.
	Streets and avenues.	County roads and suburban streets.	Repairs to asphalt pavements.		
Street asphalt paving.....square yards..	29,127.13	9,068.99	52,803.08	12,104.90	103,104.15
Asphalt surface.....do.			<sup>a</sup> 33,692.77		33,692.77
Vitrified block gutters.....do.	2,857.31	4,487.40	7,487.08	906.91	17,738.70
Asphalt block paving.....do.	6,822.01	13,822.37		<sup>b</sup> 31,858.00	52,502.38
Granite block paving.....do.				630.00	630.00
Macadam.....do.		55,184.60			55,184.60
Asphaltic macadam.....do.		12,090.42			12,090.42
Cobble and granite gutters.....do.		19,060.77			19,060.77
Ordinary grading.....cubic yards.	3,500.92	185,813.37	1,794.50	751.00	191,858.87
Macadam grading.....do.	3,949.97	2,486.94		413.00	6,849.91
Old asphalt removed.....do.			2,348.99		2,348.99
Old cobble and granite removed, square yards.	13,098.58	7,713.71		25.00	20,837.29
Old curb removed.....linear feet.	9,843.81	1,668.19	18,071.76	26.30	29,610.06
Curb set.....do.	11,032.02	22,679.76	17,974.39	5,749.28	57,435.45
Curb reset.....do.	9,139.46	4,875.49	8,596.25	729.31	23,360.51

<sup>a</sup> 11,143 square yards (in addition) of asphalt surface by Lutz heater system.

<sup>b</sup> 30,000 square yards in and around Union Station.

The following is a list of tables appended to this report:

Table A.—Street railways in the District of Columbia, July 1, 1910.

B and C.—Statement of character and extent of street pavements.

E.—Schedules of work on streets and avenues and county roads and suburban streets.

F.—Repairs to asphalt and concrete pavements.

G.—Work done for street-railway companies.

H.—Work done by day labor under appropriation for "Repairs to streets, avenues, and alleys."

I.—Regular permit work.

K.—Assessment work.

L.—Replacing and repairing sidewalks and curbs around public reservations.

M.—Miscellaneous works.

N.—Whole-cost work.

O.—Repairs to cuts made by plumbers and others.

P.—Grading by chain gang.

The heater method of repairing sheet-asphalt roadways was continued during the year, a quite limited amount of work being done. The prices obtained indicate that economy with this method in comparison with previous methods of removal and replacement of the old asphalt surface, in toto, results only when the thickness of new surface used is quite small, averaging but little over an inch. If greater thickness is advisable or necessary, the use of the heater method is of somewhat doubtful value. We are, moreover, without experience as to the behavior of pavements so resurfaced as their age progresses. Should they prove even moderately inferior in this respect to standard asphalt construction, the field for the heater method will be still more limited.

There are a number of unpaved roadways in the District where the proper pavement would be a granite block, and there are a number of other roadways which were paved with granite blocks many years ago, and to whose surroundings and conditions as they now exist the block pavement is entirely unsuited and objectionable. The replacement of the stone pavement of the latter class with a smooth pavement, such as asphalt, and the use of the blocks thus secured in the former class of roadways, are clearly indicated in the interest of good administration, and, in view of the

betterments resulting, of economical expenditure. The roadways of School street NW., between Irving and Lamont; of Thirteenth street NW., between Euclid street and Park road, and the east side of Fourteenth street from Florida avenue to Clifton street, were improved with asphaltic macadam, a pavement which commends itself in many respects under appropriate street conditions. The continued use of this type is contemplated.

The existing asphalt and coal-tar roadway pavements aggregate nearly 3,000,000 square yards, with an average age of about 14 years and an extreme age of over 30 years. The appropriations for their maintenance for the past and preceding years are demonstrably insufficient to prevent their average age from increasing, which is an identical fact with their progressive and continuing deterioration, and this phenomenon is evident on inspection. Recognizing this, Congress has provided a substantial increase of the repair fund for the ensuing year, a policy which must be continued, if the pavements are to be preserved. The details of the use during the past year of certain dust preventatives on the suburban macadam roads are given in the report of the superintendent of roads.

The purchase of a motor vehicle for the use of the engineering field party engaged in suburban and county work has resulted in so satisfactory an increase in efficiency that the conviction is felt that comparable results would follow if similar vehicles were substituted for the horse-drawn field wagons of other engineering parties whose work is remote from the District building. The superiority of such a type of transportation for general inspection use is now universally recognized, and the motor vehicle purchased this year for the superintendent of roads should be the first of a complete equipment for all whose official duties require like service.

The bridge over Piney Branch on the line of Sixteenth street extended was completed during the year, with the exception of four bronze castings, in the form of tigers, to be placed at each side of the two entrances. Their completion and erection has been placed under contract.

The District's quarry at Dickerson, Md., supplied during the past year about 30,000 cubic yards of trap-rock macadam, which cost about \$1.50 per cubic yard on the cars at Washington. Its high quality amply justifies its use on the roads in competition with other somewhat cheaper, but distinctly, inferior products.

The roadways of the Union Station Plaza and its intersecting streets have been paved during the year with such expedition that the practical completion of this portion of the project of elimination of grade crossings is anticipated during the present working season. Such portions of the roadways as had been raised in grade by 10 feet or less were paved with sheet asphalt, while such as had been raised an amount in excess of 10 feet were paved with asphalt blocks, since the latter type of pavement offers distinct advantages should correction of the surface condition become necessary as a result of the settlement of the filled ground upon which the pavements rest.

#### RECOMMENDATIONS.

I renew my recommendation of past years for the progressive removal of all grade crossings within the District of Columbia. Congress has provided for one such an item during 1911, namely, the construction of a subway at Cedar street, Takoma Park; and authority for the elimination of the grade crossing at Benning should be secured with as little delay as is practicable.

I renew my recommendation of past years, that the appropriation yearly made for "Construction of county roads" be aggregated into a single appropriation, to be expended on the roads named in the bill in a manner analogous to the operation of the schedule for paving streets within the city. About a score of items for suburban street work are yearly segregated in an anomalous manner. They should be disbursed and accounted for as a single fund. The accounting office concurs in this recommendation.

I renew my recommendation made last year, that collections of special assessments for improvements under assessment and permit work be credited in equal parts to the United States and the District of Columbia, instead of to the current appropriation, and that appropriations as made by Congress be increased by the total of these collections, as shown by past experience. The amount to be expended would thus be known in advance, not only by Congress but by the office charged with the execution of the work under the appropriation.

I respectfully transmit herewith the reports of the superintendent of streets, the superintendent of county roads, and engineer of bridges.

Very respectfully,

C. B. HUNT,  
*Engineer of Highways.*

Capt. MARK BROOKE,  
*Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner, District of Columbia.*

## REPORT OF THE SUPERINTENDENT OF STREETS.

WASHINGTON, D. C., *September 23, 1910.*

SIR: I have the honor to submit herewith the annual report of the operations under my charge for the fiscal year ended June 30, 1910. Table H is a summary of work done by day labor under the appropriation for "Current repairs to streets, avenues, and alleys." The cost of such work was \$37,104.12, including the repairs to 3,655 dangerous holes. One-third of this amount was sidewalk and alley work and the other two-thirds repairs to street roadways.

Table I is a list of work done under the permit system, wherein property owners requested the improvement and paid one-half the cost, the District paying the other half. The total cost of this work was \$29,334.95.

Table K is a list of work done under the assessment system. One-half the cost of such work is charged against the abutting property. The total cost was \$170,923.76.

Table L is a list of work paid for from the appropriation for "Replacing sidewalks and curbs around public reservations." The amount expended under this class of work was \$5,543.87.

Very respectfully,

H. N. Moss,  
*Superintendent of Streets.*

The ENGINEER OF HIGHWAYS.

## REPORT OF THE SUPERINTENDENT OF COUNTY ROADS.

WASHINGTON, D. C., *September 22, 1910.*

SIR: I have the honor to submit herewith the report of the operations of the county road division during the fiscal year ended June 30, 1910.

Very respectfully,

L. R. GRABILL,  
*Superintendent of County Roads.*

The ENGINEER OF HIGHWAYS.

*Repairs to county roads, appropriation 1910.*

Job No.	Location.	Cost.
SECTION 1.		
4008	Connecticut avenue, between Pierce Mill road and Chevy Chase Circle .....	\$5,252.13
4013	Twenty-seventh street, between Cathedral avenue and Woodley road .....	398.86
4015	Cathedral avenue, between Twenty-seventh street and Zoo Park .....	1,734.04
4021	Wisconsin avenue, from Woodley road to Macomb street .....	253.75
4076	Cathedral avenue, Twenty-seventh street, to Woodley road .....	255.87
4077	Fessenden street and Wisconsin avenue .....	212.69
4089	Massachusetts avenue, from bridge to Thirty-fourth street .....	885.04
4100	Lovers Lane, between R street and Massachusetts avenue .....	244.74
4102	Woodley road, between Thirty-fifth and Thirty-sixth streets .....	45.25
4134	Military road .....	134.44
4006	Sprinkling various roads .....	3,960.87
4269	Canal road, from Foxhall road to Aqueduct Bridge .....	212.13
4277	Chesapeake street, west of Wisconsin avenue .....	34.25
4278	Twenty-third street, north of Calvert street .....	241.56
4191	Twenty-fourth street, between Massachusetts avenue and T street .....	99.44
4192	Morrison, McKinley, Northampton, and Oliver streets .....	275.38
4245	Cathedral avenue at Woodley road .....	77.80
4215	Connecticut avenue, between Newark street and Pierce Mill road .....	1,831.21
4026	Woodley road and Cathedral avenue .....	673.39
4056	Howard avenue, Reno subdivision .....	187.88
4061	Massachusetts avenue nw., between Rock Creek and Wisconsin avenue .....	778.83
4183	Canal road above Chain Bridge road .....	182.69
4012	Forty-first street and Western avenue .....	32.62
4058	Conduit road at Chain Bridge .....	76.37
4059	Albemarle street nw., east of Connecticut avenue .....	900.20
4084	Foxhall road, between New Cut and Canal roads .....	1,979.25
4208	Rock Creek Ford road, from Military to Branch road .....	77.50
4218	Daniel road .....	22.75
Dangerous holes and minor repairs .....		21,060.43
		4,994.76
		26,055.19

*Repairs to county roads, appropriation 1910—Continued.*

Job No.	Location.	Cost.
SECTION 2.		
4007	Kenyon street east of Georgia avenue.....	\$103.62
4009	Piney Branch road, Fourteenth to Cedar street.....	1,219.75
4011	Harvard street, Georgia avenue to Sherman avenue.....	165.50
4014	Park road between Sixteenth and Seventeenth streets.....	223.89
4017	Georgia avenue between Allison and Longfellow streets.....	139.99
4020	Warder street, north of Newton street.....	108.37
4022	Irving street, Georgia avenue to Warder place.....	102.94
4023	Newton place, between Warder and Park place.....	198.54
4024	Belmont street nw., between Sixteenth and Seventeenth streets.....	258.93
4028	A road.....	66.50
4037	Various streets (killing weeds, all sections).....	1,144.62
4041	Various streets (calcium chloride).....	735.07
4052	Irving street, nw., Georgia avenue to Sherman avenue.....	187.57
4053	Morton street, Sherman avenue to Thirteenth.....	172.37
4060	Blair road, from Riggs road to District of Columbia line.....	635.25
4062	East side Fourteenth street nw., between Monroe and Otis streets.....	458.84
4063	East side Eleventh street nw., between Otis and Spring road.....	90.43
4064	South side of Park road, between Eighteenth and Nineteenth streets.....	122.12
4066	Both sides Lamont street nw., between Sherman avenue and Eleventh street.....	286.50
4081	Summit place.....	97.87
4097	Quincy street nw., between Fourteenth and Cedar road.....	154.75
4101	Fern road, from Georgia avenue to Rock Creek Park.....	235.00
4121	Adams Mill road, between Lanier place and Ontario street.....	196.13
4122	Brightwood Park.....	195.25
4136	Laurel avenue, between District of Columbia line and Lamond station.....	29.75
4137	Unimproved streets in Petworth.....	240.37
4145	Mount Pleasant street, north of Newton.....	105.12
4146	North side Farragut street, between Thirteenth and Fourteenth streets.....	99.46
4154	Roadway of Connecticut Avenue Bridge.....	1,104.48
4153	Rock Creek Church road, between Georgia avenue and Harewood road.....	432.50
4006	Sprinkling various roads.....	5,647.00
4227	Belmont street, between Thirteenth and Fourteenth streets.....	174.50
4235	Intersection of Jefferson and Illinois avenues.....	73.62
4236	Kilbourne place, between Seventeenth and Eighteenth streets.....	109.50
4237	Fifth, Seventh, and Ninth streets, across Kennedy street.....	41.75
4238	Howard place, between Sixth street and Georgia avenue.....	54.00
4201	Keefer street nw., between Georgia avenue and Sixth street.....	356.69
4209	Sherman avenue, between Barry place and Harvard street.....	124.73
4211	Eleventh street, from Florida avenue to Columbia road.....	1,323.48
4212	Georgia avenue, from Park road to Allison street.....	43.75
4217	Lamont street nw., from Georgia avenue to Sixth street.....	97.50
Dangerous holes and minor repairs.....		17,358.00
		8,808.81
		26,166.81
SECTION 3.		
4010	Twelfth street ne., Otis to Quincy streets.....	520.74
4036	Twenty-fourth street ne., at Douglas street.....	102.75
4038	Twenty-fourth street ne., between Irving street and Rhode Island avenue.....	146.00
4040	Lincoln road ne., V street to Michigan avenue.....	924.02
4087	Sixteenth street, between Brentwood road and Irving street.....	46.00
4131	Quincy street, between Thirteenth and Bunker Hill road.....	260.75
4132	Twentieth and Girard streets ne.....	375.84
4133	Fulton place ne., east of Twentieth street.....	14.75
4161	Franklin and Twenty-fourth streets ne., Langdon.....	68.00
4219	South side of Rhode Island avenue, between Twentieth street and South Dakota avenue.....	83.00
4226	Brentwood road, south of Rhode Island avenue.....	197.73
4246	Adams street nw., between North Capitol and Second streets.....	140.19
4176	North side of Rhode Island avenue, between Twentieth street and Mills avenue.....	156.37
4006	Sprinkling various roads.....	3,090.63
4042	Brookland, various streets, gravel.....	295.70
4210	Langdon, various streets.....	52.00
Dangerous holes and minor repairs.....		6,474.47
		10,652.62
		17,127.09
SECTION 4.		
4027	Nichols avenue from Hamilton road to Fourth street.....	200.00
4035	Livingston road.....	532.87
4039	Portland street se., between Seventh and Eighth streets.....	686.50
4043	Nichols avenue and Livingston road.....	77.08
4055	Nichols avenue between Park place and Congress and Hamilton roads.....	546.55
4067	Geisboro road.....	244.50
4068	Bowen road.....	345.00

*Repairs to county roads, appropriation 1910—Continued.*

Job No.	Location.	Cost.
SECTION 4—continued.		
4069	Bennings road.....	\$373. 25
4111	Anacostia road from Pennsylvania avenue to Sheriff road.....	223. 25
4112	Walker road from Hamilton road to District of Columbia line.....	228. 42
4162	Bennings road.....	231. 45
4006	Sprinkling various roads.....	2,720. 00
4267	Central avenue se. from Bennings road to District of Columbia line.....	73. 00
4268	Bennings road.....	189. 70
4193	Chicago street se. east of Nichols avenue.....	310. 64
		6,982. 21
	Dangerous holes and minor repairs.....	8,471. 67
		15,453. 88

## RECAPITULATION.

Section 1.....	\$26,055. 19
Section 2.....	26,166. 81
Section 3.....	17,127. 09
Section 4.....	15,453. 88
Total.....	84,802. 97
Miscellaneous.....	627. 73
Blacksmithing.....	277. 50
Stone and freight.....	4,819. 00
Tools.....	1,206. 63
Traveling expenses.....	190. 55
Hardware.....	80. 61
Dynamite.....	3. 04
Castings.....	115. 97
Lumber.....	122. 37
Breaking stone.....	85. 74
Paint.....	63. 80
Coal.....	201. 00
Engine oil.....	26. 45
Hauling.....	7,007. 34
Moving lamps.....	3. 50
Total.....	99,634. 20
Balance.....	365. 80
Total.....	100,000. 00
Amount of appropriation.....	100,000. 00

The above was divided as follows:

Labor and materials for larger repairs.....	\$34,576. 92
Labor for minor repairs, representing small items and continuous repair..	32,927. 86
Hire of teams for sprinkling roads.....	15,418. 50
Labor and materials for dust preventives.....	2,514. 40
Labor and materials for killing weeds.....	1,144. 62
Miscellaneous items, materials, tools, hardware, etc.....	6,044. 06
Hauling stone by contract.....	7,007. 84
Balance.....	365. 80
Total.....	100,000. 00

The amount available for repairs was less than for several years, owing to the fact that \$20.00, of the appropriation was made immediately available and was partly used during the previous fiscal year. This left the appropriation low during the latter part of the year, during which time only the most necessary work could be done.

The largest items of expenditure were the repair of Connecticut avenue from Cathedral avenue to Chevy Chase Circle, \$7,083.34; Cathedral avenue from the Zoo to Twenty-seventh street, \$2,067.71; Piney Branch road, \$1,219.75; Connecticut Avenue Bridge, \$1,104.48; Eleventh street from Florida avenue to Columbia road, \$1,323.48; Foxhall road, \$1,979.25; Lincoln road, \$924.02; streets in Congress Heights, \$1,433.05.

A macadam cleaner was purchased and proved most effective.

*Operations in use of dust preventives (other than water), weed killer, etc., 1910.*

Job No.	Location.	Square yards.	Cost.		Total.	Cost per square yard.	Amount and kind of oil.	Results obtained.
			Material.	Labor.				
a 4281	Georgia avenue, Allison to Longfellow streets;	40,000.0	\$538.65	\$226.73	\$865.38	\$0.0214	{ Soap, 500 pounds, \$17.75; 4,700 gallons G. R. Co. emulsion, at 4¢ cents. 6,423 gallons standard emulsifying oil, at 5¢ cents. July 26, 1909, 8,342 gallons I. R. Co. liquid asphalt, at 6¢ cents. 10 barrels standard road oil, No. 4.....	Good results.
b 4017	Georgia avenue, Park road to Allison street							Fair.
4061	New Hampshire avenue, Park road to Georgia avenue; Rock Creek Church road	c 18,000.0	500.00	278.83	778.83	.0433		Good.
	Massachusetts avenue, Rock Creek to Wisconsin avenue	1,000.0	None.					Good for two or three months.
4043	Fourteenth street NW, between Taylor and Varnum streets (west side).	6,000.0	None.	77.08	77.08	.013	10 barrels I. R. Co. emulsion (donated).	Fair.
	Nichols avenue, Wilmington to Atlantic streets.							
4017	Union Station Plaza.		(d)	(c)	65.60		Glutrin, 1 car	Good about one month; afterwards washed off.
4037	Monroe street, Sherman to Fourteenth streets.		743.00	401.62	1,144.62	.010	Am. Hort. Co., weed killer	Good.
4041	Newton street, Fourteenth to Sixteenth streets	c 114,000.0	490.00	228.57	718.57	.0092	2 cars calcium chloride, fused	Diminished watering about one-half while in use, July 10 to Nov. 1.
	Various streets.	c 78,000.0						
	Streets, Mount Pleasant.							
4280	Sheriff road		None.	8.94	8.94		Old oil (repairs)	Good.
4481	School street, north of Irving street.	685.2			479.63	f .70	Fiberline (asphalt macadam)	
	a 1909.							
	b 1910.							
	c Estimated.							
	d Donated; freight, \$65.60.							
	e Charged with Job No. 4017.							
	f Contract price.							
<i>Total cost, summer 1909.</i>								
Oiling.....								\$1,730.23
Calcium chloride.....								718.57
Glutrin (freight).....								65.60
Dust preventives.....								2,514.40
Weed killer.....								1,144.62
Charged repairs to county roads.....								3,639.02
Bituminous macadam (charged School street, grading and improving).....								479.63
Total.....								4,138.65

## REPORT OF THE ENGINEER OF BRIDGES.

WASHINGTON, D. C., September 1, 1910.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1910.

The expenditures under the construction and repair of bridges are as follows:

*Expenditures, appropriation for "Construction and repair to bridges, 1910."*

Bridge No.	Character of work.	Cost.
1	Paint.....	\$643.00
7	.....do.....	1,200.50
7	Relay sidewalks.....	1,269.56
10	Refloor.....	70.16
13	.....do.....	189.72
25	.....do.....	1,106.52
27	.....do.....	1,509.84
27	Steel reinforcing.....	1,457.08
27	Paint.....	600.00
30	Minor repairs.....	116.58
30	Wooden towers to decrease vibration.....	1,981.37
34	Minor repairs.....	46.08
35	.....do.....	44.08
39	Refloor.....	312.29
40	.....do.....	652.24
54	.....do.....	356.80
54	Implace steel floor beams.....	335.97
54	Paint.....	414.17
301	Four lamp tops.....	214.00
	Dangerous holes and minor repairs:	
	July 1 to 15, 1909.....	57.50
	July 16 to 31, 1909.....	25.73
	Aug. 1 to 15, 1909.....	30.50
	Aug. 16 to 31, 1909.....	50.07
	Sept. 1 to 15, 1909.....	54.50
	Sept. 16 to 30, 1909.....	117.20
	Oct. 1 to 15, 1909.....	80.57
	Oct. 16 to 31, 1909.....	93.06
	Nov. 1 to 15, 1909.....	420.22
	Nov. 16 to 30, 1909.....	452.33
	Dec. 1 to 15, 1909.....	
	Dec. 16 to 31, 1909.....	50.75
	Jan. 1 to 15, 1910.....	4.00
	Jan. 16 to 31, 1910.....	1.00
	Feb. 1 to 15, 1910.....	5.50
	Feb. 16 to 28, 1910.....	
	Mar. 1 to 15, 1910.....	
	Mar. 16 to 31, 1910.....	
	Apr. 1 to 15, 1910.....	
	Apr. 16 to 30, 1910.....	8.62
	May 1 to 15, 1910.....	41.56
	May 16 to 31, 1910.....	109.50
	June 1 to 15, 1910.....	52.00
	June 16 to 30, 1910.....	12.00
	Photographic supplies.....	35.58
	One-half cost of horse.....	125.00
	One-half cost of harness.....	20.00
	Hire of horse one month.....	40.00
	Board for bridge inspector's horse, at \$15 per month.....	180.00
	Forage for horse.....	106.75
	Paint.....	98.00
	Coal.....	10.00
	Tools.....	31.92
	Miscellaneous supplies.....	23.36
	Salaries, etc.....	2,284.13
	Amount expended.....	17,154.70
	Appropriation, "Construction and repair of bridges, 1910".....	15,000.00
	Repayments:	
	1909—Washington Railway and Electric Co., one-half cost of work on P Street Bridge.....	441.00
	1909—Capital Traction Co., one-half cost of work on M Street Bridge.....	406.09
	1910—Capital Traction Co., entire cost reinforcing No. 27 bridge.....	1,457.08
	Total amount available.....	17,304.17
	Amount expended to date.....	17,154.70
	Balance.....	149.47
	Total.....	17,304.17



Since the last report legislation has been obtained for the purchase of land necessary for the protection of the southern end of the Connecticut Avenue Bridge from the encroachment of buildings, but unless public control of land near the north end is soon obtained there will be the unsatisfactory condition of an ornate bridge with the end hidden by private structures.

It is also suggested that serious efforts be made toward the passage of the bill already introduced in Congress for the purchase of 2½ acres of land immediately east of the Sixteenth Street Bridge over Piney Branch Valley, not only for the purpose of providing an entrance to the Piney Branch parkway, but as a protection to the bridge. If this land is not purchased within a reasonable time, it is believed the owners will fill in the valley and build thereon, which would absolutely ruin the appearance of the bridge.

A contract was entered into in June, 1909, with the Cranford Paving Company for the widening of the Sixteenth Street Bridge over Piney Branch. The work was completed April 15, 1910, the contract price being \$66,339.11. After necessary filling of the approaches and paving of the roadway, the bridge was opened to travel June 1. A contract has been entered into with Mr. A. Phimister Proctor, sculptor, for the furnishing and erecting of four bronze tigers, to be placed at the ends of the bridge. It is believed that these tigers will be erected this fall.

The old Anacostia River (navy-yard) Bridge was removed and the channel cleared under a contract with Martin McNamara, the contract price being \$8,337. This work was completed April 20 last.

A contract was entered into with E. G. Gummel in June, 1910, for the construction of a small arch bridge on Beach drive north of the Military road, Rock Creek Park.

The tower spans of bridge No. 27 (Connecticut Avenue Bridge across Klingle Ford road) not being sufficient to carry the heavy cars put on the Connecticut avenue line, they were replaced by heavier ones at a cost of \$1,457.08, the entire cost being borne by the Capital Traction Company.

Under the District of Columbia appropriation bill, approved May 18, 1910, money was made immediately available for strengthening and stiffening bridge No. 30, across Rock Creek on the line of Calvert street. Plans and specifications are now being prepared for this work. It may be stated that a careful examination of this bridge shows that in general it is of sufficient strength to carry the heavy cars going over it and that only a few members have a factor of safety less than that called for by good practice. The numerous adjustable members, however, cause heavy and disagreeable vibrations, which, it is confidently expected, will be greatly decreased by replacing these adjustable members with stiff ones.

It may be noted that bridges 27 and 30 were constructed in 1891 by the Rock Creek Railway Company and afterwards transferred to the District of Columbia. They are what is known as heavy suburban bridges. Bridge 30 is now in the heart of a thickly built-up resident section and is over the National Zoological Park and in close proximity to the Connecticut Avenue Bridge. It is believed that good policy will dictate its replacement by a structure architecturally more in harmony with the surroundings before many years. I would renew the recommendation of the former engineer of bridges that an appropriation of \$5,000 be obtained to be used in making survey, plans, specifications, and estimates for a new bridge to replace the existing structure.

The prevention of unlawful dumping in the Rock Creek Valley has been one of the duties of this office for a number of years. There are several places along this valley where encroachment of the filled slopes upon the stream is imminent and where a land slip with the consequent damming of the stream would cause serious damage to property above. The depositing of material in this valley can not be entirely stopped until the property becomes public. The passage of the necessary legislation for the purchase of the land in the valley, at least between M street and Massachusetts avenue, is again urged and attention is invited to Senate Document No. 458, Sixtieth Congress, first session, in which plans and estimates prepared in this office for the improvement of the valley are exhibited.

Recently an English steamer of some 6,000 tons burden laden with paving blocks arrived here and had great difficulty in finding a berth. The circumstance brought forward forcibly the necessity for beginning work along the harbor front. Plans for this work were prepared in this office and printed in Senate Document No. 519, Sixtieth Congress, first session, to which attention is invited.

I would renew the recommendation of the former engineer of bridges as to the construction of the Q Street Bridge over Rock Creek. The estimated cost of this project is \$225,000, of which \$75,000 could be expended during the fiscal year.

An estimate of \$115,000 is also submitted for constructing a viaduct over the tracks of the Baltimore and Ohio and Pennsylvania railroads on the Benning road, this being a rather heavily used grade crossing.

It is believed that the filling over the arches on the Connecticut Avenue Bridge has reached its final settlement. An appropriation of \$3,000 is therefore recommended for laying the cement sidewalk omitted on account of this settlement and for relaying to grade curb and block gutters.

There are 160 bridges, costing approximately \$3,400,000, under the supervision of this office. On account of the high price of lumber, paint, and labor these bridges can not be maintained in a first-class condition for less than \$20,000 a year. An appropriation of \$20,000 is therefore requested for the construction and repair of bridges during the next fiscal year.

An appropriation of \$5,600 should be made for the fiscal year 1912 for the "Maintenance and operation of the Anacostia Bridge."

This office was under the charge of Mr. W. J. Douglas until May 20 last, since which time the writer has been in charge.

Very respectfully,

THOS. C. J. BAILY, Jr.,  
Engineer of Bridges.

The ENGINEER OF HIGHWAYS.

#### SURFACE DIVISION.

*Statement showing number of employees temporarily required in connection with street, road, and bridge construction and repairs, and appropriations and deposits from which paid, during the fiscal year ended June 30, 1910.*

Designation.	Number.	Rate per diem.
Assistant engineer.....	1	\$4.
Computers.....	2	1 at \$3.75, 1 at \$4.50.
Copyists.....	4	1 at \$2.50, 2 at \$3.25, 1 at \$3.50.
Draftsmen.....	2	1 at \$3.50, 1 at \$5.
Inspectors.....	19	2 at \$3, 13 at \$4, 1 at \$3.50, 2 at \$5, and 1 at \$8.
Overseers.....	4	2 at \$2.25, 2 at \$3.
Rodman.....	1	\$2.50.
Transit men.....	3	1 at \$3, 2 at \$4.

#### *Appropriations from which paid.*

Improvements and repairs, District of Columbia, 1910.....	\$19, 224. 74
Elimination of grade crossings, District of Columbia.....	6, 002. 25
Sixteenth Street Bridge.....	4, 259. 00
Removal of old Anacostia Bridge.....	1, 035. 50
Total.....	30, 521. 49

TABLE A.—Street railroads in operation in District of Columbia July 1, 1910.

Name of company.	Underground electric.		Overhead electric.	
	Double track.	Single track.	Double track.	Single track.
Washington Railway and Electric Co.:	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>
Metropolitan.....	8.60	3.98		
Columbia.....	2.77		4.12	0.89
City and Suburban.....	3.86	2.36	5.58	
Brightwood.....			5.93	
Georgetown and Tenallytown.....			4.16	
Anacostia and Potomac River.....	7.65		1.46	1.64
Total.....	22.88	6.34	21.25	2.53
Capital Traction.....	20.19	3.60	3.57	
Washington and Great Falls.....			3.88	
Washington, Alexandria and Mount Vernon.....	.30	.46		
East Washington.....				.50
Total.....	43.37	10.40	28.70	3.03
Tracks used in common by Capital Traction and Washington Railway and Electric companies.....	1.55			
Used in common by Washington Railway and Electric and Washington, Alexandria and Mount Vernon companies.....	.40			
Washington, Spa Springs and Gretna R. R.....				2.65
Total.....	45.32	10.40	28.70	5.68

Baltimore and Washington Transit Company, 2.33 miles single track, not yet in operation.

TABLES B AND C.—Character and extent of roadway pavements July 1, 1910.

Section.	Asphalt.	Asphalt block.	Granite and rubble.	Vitrified block.	Cobble.
Northwest.....square yards..	1,668,761	32,084	171,950	16,747	35,423
Northeast.....do.....	240,674	231,458	25,193	3,882	.....
Southeast.....do.....	167,500	203,664	43,734	.....	8,689
Southwest.....do.....	222,500	54,630	191,729	3,138	21,808
Georgetown.....do.....	135,000	21,204	58,677	1,635	14,426
Suburban.....do.....	{ a 12,090 309,000 }	76,592	27,394	.....	.....
Total.....do.....	2,755,525	619,632	518,677	25,402	80,346
Gutters.....do.....	191,652	.....	.....	.....	.....
Railroad pavement.....do.....	360,000	3,500	150,000	4,200	.....
Total.....do.....	3,307,177	623,132	608,667	29,602	80,346
Miles.....	145.60	31.74	26.20	1.40	4.08

Section.	Macadam.	Gravel and unimproved.	Gutters on asphalt streets.	Pavement maintained by street railways.	Total.
Northwest.....square yards..	37,700	58,571	112,093	255,150	2,388,479
Northeast.....do.....	40,000	207,074	21,461	70,000	839,742
Southeast.....do.....	42,500	275,000	12,550	47,600	801,237
Southwest.....do.....	28,700	127,158	21,460	55,900	727,023
Georgetown.....do.....	12,000	24,301	33,279	35,700	306,222
Suburban.....do.....	1,225,000	1,400,000	20,809	92,400	3,163,285
Total.....do.....	1,385,900	2,092,104	b 191,652	c 556,750	8,225,988
Railroad pavement.....do.....	.....	.....	.....	39,050	.....
Total.....do.....	1,385,900	2,092,104	.....	39,050	8,225,988
Miles.....	89.00	163.56	.....	.....	461.58

<sup>a</sup> Asphaltic macadam.<sup>b</sup> 184,305 vitrified block, 5,672 granite, 1,675 cement.<sup>c</sup> 360,000 asphalt, 160,000 granite, 3,500 asphalt block, 4,200 vitrified block, 39,050 scoria and wood.

TABLE E.—Statement of work on streets and avenues and county roads and suburban streets for year ended June 30, 1910.

## STREETS AND AVENUES.

Street.	From—	To—	Section.	Kind of improvement.	Contract work.										Material.				
					Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified block and cobble gutters.	Vitrified block.	8 by 8 curb.	6 by 20 curb.	
						Feet.				Cubic yards.	Cubic yards.	Square yds.	Linear feet.	Linear feet.	Linear feet.	Square yds.		Linear feet.	Linear feet.
First.	B.	C.	Northwest.	Asphalt pavement.	1,167.76	480	4357	\$1.45 <sup>a</sup>	163.37			<sup>a</sup> 576.70 <sup>b</sup> 810.70	18.84	18.84	765.71	193.75	9,090		
Second.	B.	C.	do.	do.	2,120.79	508	4357	1.45 <sup>a</sup>	87.63			2,290.50	18.84	18.84	{ 119.80 885.64	200.32	8,500		
Seventh.	Q.	R.	do.	do.	2,211.59	625	4357	1.45 <sup>a</sup>	112.64			2,364.23	636.26	639.68	{ 79.23 295.79	198.05	9,514	586.77	
Florida avenue.	Eleventh.	Fourteenth.	do.	do.	5,219.39	1,390	4357	1.45 <sup>a</sup>	652.00	834.00		488.21	183.81	1,122.71	79.23	198.05	22,000	{ 1,253.68 2,869.78	
Eighth.	Maryland avenue.	H.	Northeast.	do.	3,192.97	1,525	4357	1.45 <sup>a</sup>	261.00	520.00	1,300.00	2,930.00	<sup>c</sup> 1,153.67	1,342.03	295.79	481.91	7,800	1,053.20	
Ninth.	do.	I.	do.	Asphalt block.	1,535.89	413	4358	1.65	160.00	290.00	1,000.00	104.00	102.70	334.24	325.93	102.02	4,600	529.96	323.05
Tenth.	do.	J.	do.	Asphalt.	1,048.73	319	4155	1.48	141.00	79.00		259.78	79.00	334.24	526.12	102.02	4,600	529.96	323.05
North Carolina avenue.	Thirteenth.	B.	do.	Asphalt block.	5,286.12	1,210	4358	1.65	894.00	300.00		521.00	527.40	90.07	103.34	4,600	529.96	323.05	
Eleventh.	do.	C.	do.	Asphalt.	3,514.06	911	4357	1.45 <sup>a</sup>	80.00	624.00		600.00	1,769.67	1,769.67	191.46	292.24	13,820	1,086.48	
Fourth.	do.	D.	do.	Asphalt.	3,326.02	1,225	4357	1.45 <sup>a</sup>	469.00	425.00		<sup>b</sup> 651.00 <sup>d</sup> 309.00	900.00	91.64	2,392.03	437.34	14,500		
Second.	F.	I.	do.	do.	4,143.86	1,263	4357	1.45 <sup>a</sup>	185.00	544.00		1,790.00	2,160.00	2,161.50	286.87	407.24	17,900		
C.	Tenth.	Eleventh.	Northwest.	do.	1,059.37	250	4357	1.45 <sup>a</sup>	125.86			1,006.38	373.44	435.95		617.24	4,446		
Twenty-seventh.	M.	Olive.	Georgetown.	do.	969.90	333	4357	1.45 <sup>a</sup>	117.42	143.97		206.86	70.00	32.97	807.90	203.44	9,000		
I.	Second.	Third.	Southwest.	do.	1,152.74	357	4357	1.45 <sup>a</sup>	52.00	190.00			70.00	32.97	807.90	203.44	9,000		
Total asphalt.					29,127.18	9,186							9,843.81	11,032.02	9,159.46	2,857.31	124,770	7,749.99	2,718.56
Total asphalt block.					6,822.01	1,623			3,500.92	3,949.97	13,098.58								

## COUNTY ROADS AND SUBURBAN STREETS.

Massachusetts avenue.	Wisconsin avenue.	Nebraska avenue.	Northwest.	Grade and improve.	6,220.00	2,800	4355		117,228.00									
Lincoln road.	Truxton circle.	R.	Northwest.	Pave, asphalt.	1,805.07	462	4357	\$1.45 <sup>a</sup>	256.79	300.84	363.68	650.00	749.03	201.31				
Sixteenth.	Oak.	Madison.	Northwest.	Grade and improve.	16,667.00	7,500	4391		5,244.00									
Do.	do.	Webster.	do.	do.			4560		16,175.00									
U.	North Capitol.	Flagler place.	do.	Asphalt block.	3,514.75	1,017	4358	1.80	423.42	430.07	934.42	59.40	2,018.14		21.10	894		
Mills avenue.	Twenty-fourth.	Rhode Island avenue.	Northwest.	Grade and improve.	(/)		4391											
Harvard.	Eleventh.	Lamont.	do.	Asphalt.	2,485.19	720	4358	1.80	150.70	301.41			605.80	894.44				
School.	Irving.	do.	do.	Bituminous concrete.	885.19	250	4497	1.45 <sup>a</sup>	171.37	257.69	461.25	18.00		1,161.61	223.47	10,720		545.04
Todd place.	First.	Second.	do.	Grade and improve.	1,811.06	603	4357		1,008.00				2,949.26		1,154.57			
Warder place and Park place.	Seventh.	Eight.	Northwest.	do.	3,270.00	1,406	4391		126.00		26.00				300.00			2,042.56
Lawrence.	Twenty-second.	Twenty-fourth.	do.	do.	758.00	340	4391											
Four.	Connecticut avenue.	Monroe.	Northwest.	Asphalt block.	1,871.31	549	4358	1.80	362.29	323.02		41.50	36.80	127.74				
Garfield.	Eleventh.	Otis.	do.	Grade and improve.	1,618.00	430	4391		312.00		571.00							
Newton.	Fourth.	Holmead place.	do.	do.	1,283.00	480	4391		255.00		7.00							
Reilon.	First.	Second.	do.	Asphalt.	1,667.22	556	4357		132.39	249.42		412.22	550.33	546.87				
Meridian.	Center.	Holmead place.	do.	Grade and improve.	3,037.00	1,300	4391		740.00		7.00	2,014.19	243.15	762.00	34,700			554.80
Fourth.	Elm.	W.	do.	Asphalt.	1,234.24	736	4357		107.51	139.75	663.74	42.62		243.15	268.99	11,974		
Front.	Twenty-second.	Pennsylvania avenue.	Southwest.	Grade and improve.	2,029.00	800	4391		1,704.00			1,643.17	520.84					
Third.	do.	Elm.	Northwest.	Asphalt.	1,096.39	469	4357		73.96	182.73	258.07	45.00		796.19	206.15			
Jackson.	Eighteenth.	Twenty.	Northwest.	Grade and improve.	(/)		4391											
Todd place.	North Capitol.	Lincoln road.	do.	Asphalt block.	984.15	364	4358		87.46	110.01	323.55	81.00	36.60	732.99				
Upon east of Pierce Mill road.	do.	do.	Northwest.	Grade and improve.	(/)		4420											
Monroe.	Eighteenth.	Thirteenth.	do.	do.	1,580.00	637	4391		307.00									
Kearney.	Twelfth.	Holmead place.	Northwest.	do.	1,283.00	472	4391		293.00			947.15						
Oak.	Fourth.	do.	do.	do.	(/)		4391											
Walbridge subdivision of Ingleside.	Tenth.	Thirteenth.	do.	do.	3,652.00	1,289	4391		239.00		594.50							
Otis.	Monroe.	Otis.	do.	do.	1,787.00	731	4391		993.00		176.00							
Ninth.	Ingraham.	Kennedy.	do.	do.	11,405.23	2,705	4566	.93			2,317.00	34.50	2,531.37	30.80	734.00			
Thirteenth.	do.	Park road.	do.	Asphaltic macadam.			4391											
T.	Lincoln Road.	Second.	Northwest.	Grade and improve.		1,150	4401		5,765.00		162.00	18.40	69.68		1,031.72			
Pennsylvania avenue.	do.	do.	do.	do.			4391		752.00									
Q.	Twenty-third.	Minnesota avenue.	Southwest.	do.			4562	.37	12,100.00									
Rittenhouse.	Naylor road.	Blair road.	do.	Grade and gravel.		1,348	4391		1,910.00						1,069.30			
Thirteenth.	Georgia avenue.	Monroe.	Northwest.	Grade and improve.	12,000.00	4,500	4391		7,847.00						3,029.50			
	Park road.	do.	do.	Widen, grade, and improve.			4391		244.00					368.35	136.05			
M.	Bladensburg road.	Twenty-fourth.	Northwest.	Grade and improve.			4398		5,762.00									
Connecticut avenue.	Macomb.	Newark.	Northwest.	Asphalt.	1,455.01	326	4357		188.84	192.00	189.56	54.01	719.85		94.78	4,370	519.40	31.44
School.	Irving.	Lamont.	do.	Grade and improve.	685.19	250	4391		329.00		38.50			25.90				468.97
Franklin.	North Capitol.	Glenwood Cemetery.	Northwest.	Asphalt block.	1,538.15	302	4358	1.80	815.50		4.00	104.96	1,229.45				1,058.10	
Girard.	do.	do.	do.	do.	2,104.37	437	4358	1.80	859.89			38.84	1,636.22				1,467.06	
I.	Second.	Third.	Northwest.	do.	1,395.84	417	4358	1.80	246.25		151.67	67.74	866.79				770.10	
Asphalt.					9,068.99	3,152												
Asphalt block.					13,822.37	3,806												
Macadam.					55,184.60	22,855												
Asphaltic macadam.					12,090.42	2,955			185,813.37	2,486.94	7,713.71	1,668.19	22,679.76	4,875.49	23,548.17	189,540	12,928.22	3,642.81

<sup>a</sup> Vitrified brick. <sup>b</sup> Granite. <sup>c</sup> Assessment and permit. <sup>d</sup> Cobble. <sup>e</sup> Granite. <sup>f</sup> Work not completed. <sup>g</sup> Paving roadways under permit. <sup>h</sup> Vitrified block gutters. <sup>i</sup> Cobble gutters. <sup>j</sup> 9,204 cubic yards stone and screenings from District 9.

ment of work on streets and avenues and suburban streets for year ended June 30, 1910.

# STREETS AND AVENUES.

Contract work.							Material.				Cost of material.	Cost of extra work and day labor.	Amount of contract work.	Total cost of work.	Contractor.
Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified block and cobble gutters.					
Feet.				Cubic yards.	Cubic yards.	Square yds.	Linear feet.	Linear feet.	Linear feet.	Square yds.					
1,167.76	480	4357	\$1.45 <sup>1</sup>	163.37	-----	<sup>a</sup> 576.70 <sup>b</sup> 810.70	18.84	18.84	765.71	193.75	9,090	-----	18.84	\$217.62	Cranford Paving Co.
2,120.79	508	4357	1.45 <sup>1</sup>	87.63	-----	2,290.50	18.84	18.84	119.80	200.32	8,500	-----	18.84	205.03	Do.
2,211.59	625	4357	1.45 <sup>1</sup>	112.64	-----	2,364.23	636.26	639.68	855.64	198.05	9,514	586.77	51.21	4,834.77	Do.
5,219.39	1,390	4357	1.45 <sup>1</sup>	652.00	834.00	488.21	183.81	1,122.71	79.23	198.05	22,000	1,033.20	116.66	10,096.95	Do.
3,192.97	1,525	4357	1.45 <sup>1</sup>	261.00	520.00	1,300.00	<sup>c</sup> 1,153.67	1,342.03	295.79	481.91	7,800	2,869.78	88.35	11,531.27	Do.
1,535.89	413	4358	1.65	160.00	290.00	164.00	2,930.00	2,922.30	335.93	162.02	4,600	529.96	19.13	7,257.33	Do.
1,048.73	319	4155	1.48	141.00	79.00	-----	102.70	334.24	526.12	-----	15,820	1,086.48	323.05	9,799.92	Do.
5,286.12	1,210	4358	1.65	894.00	300.00	521.00	-----	527.40	90.07	103.34	4,600	529.96	19.13	3,114.47	Washington Asphalt Block and Tile Co.
3,514.06	911	4357	1.45 <sup>1</sup>	80.00	624.00	600.00	218.40	1,124.14	191.46	292.24	15,820	1,086.48	323.05	10,354.20	Cranford Paving Co.
3,326.02	1,225	4357	1.45 <sup>1</sup>	469.00	425.00	<sup>b</sup> 651.00	1,077.85	91.64	2,392.03	437.34	14,500	-----	91.64	6,441.87	Cranford Paving Co.
4,143.86	1,263	4357	1.45 <sup>1</sup>	185.00	544.00	<sup>d</sup> 309.00	900.00	91.64	2,392.03	437.34	14,500	-----	91.64	7,855.78	Do.
1,059.37	250	4357	1.45 <sup>1</sup>	125.86	1,790.00	1,006.38	2,160.00	2,161.50	286.87	407.24	17,900	-----	25.12	8,243.25	Do.
969.90	333	4357	1.45 <sup>1</sup>	117.42	-----	206.86	373.44	435.95	-----	75.44	3,000	370.12	6.28	2,254.10	Do.
1,152.74	357	4357	1.45 <sup>1</sup>	52.00	190.00	-----	70.00	32.97	807.90	203.44	4,440	-----	32.97	1,927.40	Do.
29,127.18	9,186	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	Do.
6,822.01	1,623	-----	-----	3,500.92	3,949.97	13,098.58	9,843.81	11,032.02	9,159.46	2,857.31	124,770	7,749.99	2,718.56	598.62	74,081.63
															86,154.65

## COUNTY ROADS AND SUBURBAN STREETS.

6,220.00	2,800	4355		117,228.00											\$25,613.09	\$25,613.09	George Hyman.	
1,805.07	462	4357	\$1.45 <sup>1</sup>	256.79	300.84	363.68	650.00	749.63	201.31		660.41			94.35	\$631.97		Cranford Paving Co.	
16,667.00	7,500	4391		5,244.00													E. G. Gummel.	
		4560		16,175.00	430.07	934.42				\$7,708.00					\$174.94	29.00	George Hyman.	
3,514.75	1,017	4358	1.80	423.42			59.40	2,018.14		21.10	894				19.09		Washington Asphalt Block and Tile Co.	
( )		4391															E. G. Gummel.	
2,414.30	730	4358	1.80	150.70	301.41			665.80	894.44				545.04	29.86	527.87		Washington Asphalt Block and Tile Co.	
1,885.19	449	4497		70													Cranford Paving Co.	
1,811.06	603	4357	1.45 <sup>1</sup>	171.37	257.69	461.25	18.00		1,161.61	223.47	10,720				228.87	332.33	Do.	
3,270.00	1,406	4391		1,008.00						1,181.57			2,042.56	51.81	1,903.07	13.22	E. G. Gummel.	
758.00	340	4391		126.00		26.00				300.00							Do.	
( )		4391															Do.	
1,871.31	549	4358	1.80	302.29	323.02			36.80	127.74								Washington Asphalt Block and Tile Co.	
1,618.00	600	4391		312.00		571.00	41.50		26.30	430.04	18,500				394.98	470.00	Do.	
1,283.00	480	4391		255.00		7.00				430.04	18,500						Washington Asphalt Block and Tile Co.	
1,067.22	556	4357		132.39	249.42	364.77				331.32	14,000	883.64		18.84	1,022.11	826.67	E. G. Gummel.	
3,037.00	1,300	4391		740.00		7.00	412.22		545.87	188.27	8,600				684.21	694.02	Do.	
1,234.24	736	4357		107.51	139.75	663.74		2,014.19		782.00	34,700	1,325.73	554.80		684.21	3,470.12	Cranford Paving Co.	
2,029.00	800	4391		1,704.00			42.62	1,167.35	243.15	268.99	11,974	1,148.60			2,268.69	1,598.04	E. G. Gummel.	
								1,643.17	520.84	<sup>b</sup> 54.44					28.26	2,906.80	Cranford Paving Co.	
1,096.39	469	4357		73.96	182.73	258.07	45.00			<sup>d</sup> 927.70						1,997.04	E. G. Gummel.	
( )		4391						796.19	206.15	25.47	1,222	743.20					Do.	
984.15	364	4358		87.46	110.01	323.55	81.00	36.60						55.76	678.27	2,507.99	Cranford Paving Co.	
( )		4420															E. G. Gummel.	
1,580.00	637	4391		307.00													Do.	
1,283.00	472	4391		293.00						580.90							Do.	
( )		4391						947.15		<sup>a</sup> 337.23	13,600	904.94		18.84	1,030.51	696.24	Do.	
3,652.00	1,289	4391		239.00	594.50											970.00	Do.	
( )																	Do.	
1,187.00	731	4391		993.00	176.00												Do.	
11,405.23	2,705	4566	93	5,765.00	2,317.00	162.00	34.50	2,531.37	30.80	734.00							Do.	
( )	1,150	4401		752.00			18.40	69.68		865.20	38,400	3,447.02	21.98	2,789.40	307.15	780.10	Cranford Paving Co.	
( )		4562	37	12,100.00						1,031.72						12,951.25	16,047.80	(Thomas R. Riley & Co.
12,000.00	4,500	4391		1,910.00												2,371.15	3,269.92	Do.
( )		4391		7,847.00												898.77	4,506.60	W. F. Brenizer.
( )		4391		244.00				308.35								4,506.60	4,506.60	E. G. Gummel.
		4398		5,702.00						1,069.30						9.20	1,245.42	Do.
1,455.01	326	4357		188.84	192.00	189.56	54.01	719.85	25.90	94.78	4,370	519.40	31.44	54.15	605.06	2,939.49	327.99	Do.
1,538.15	250	4391		329.00		4.00	104.96	1,229.45						18.84	445.52	1,757.41	1,757.41	Harper & Voigt.
2,104.37	437	4358	1.80	859.89			38.84	1,636.22				1,058.10	61.23	908.54		2,908.92	3,513.98	Cranford Paving Co.
1,395.84	417	4358	1.80	246.25	151.67		67.74	866.79				1,407.06	58.09	1,230.21	65.32	3,613.45	4,587.31	E. G. Gummel.
												770.10	57.94	634.94		4,781.71	6,011.93	Washington Asphalt Block and Tile Co.
																3,163.43	3,798.37	Do.
9,068.99	3,152									<sup>a</sup> 4,487.40								Do.
13,822.37	3,806									<sup>f</sup> 19,060.77								Do.
55,184.60	22,855									23,548.17	189,540	12,928.22	3,642.81	650.14	18,032.56	662.46	138,046.73	156,746.40
12,090.42	2,955			185,813.37	2,486.94	7,713.71	1,668.19	22,679.76	4,875.49									

<sup>e</sup> Paving roadways under permit.

<sup>a</sup> Vitrified block gutters.

<sup>f</sup> Cobble gutters.

<sup>g</sup> 204 cubic yards stone and screenings from District quarry, costing \$13,983.91, for macadam. Spread and rolled by day labor, cost of which is given in Table M.



TABLE E.—Statement of work on elimination of grade crossings for year ended.

Street.	From—	To—	Section.	Kind of pavement.	Contract work.								
					Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb
						<i>Fect.</i>			<i>Cubic yds.</i>	<i>Cubic yds.</i>	<i>Square yds.</i>	<i>Linear ft.</i>	<i>Linear</i>
E.	New Jersey avenue.	North Capitol.	Northwest.	Asphalt.	1,728.51	434	3927	\$1.63					
F.	do.	do.	do.	do.	2,469.38	627	3927	1.63	307.00	311.00			
G.	Massachusetts avenue.	Second.	Northeast.	do.	1,083.59	410	3927	1.63	5.00				
D.	New Jersey avenue.	Massachusetts avenue.	Northwest.	do.	511.95	281	4357	1.63	126.50			36.30	
First.	Delaware avenue.	Second.	Northeast.	do.	2,281.58	677	3927	1.63		.00			
First.	C.	D.	do.	do.	1,479.72	450	3927	1.63	13.00				
Florida avenue.	East of.	Union Plaza.	do.	Asphalt block.	1,258.00	325							1.47
E.	South Capitol.	Eckington place.	do.	Asphalt.	2,026.35	600	3927	1.63	300.00		25.00		
		Delaware avenue.	Southwest.	do.	423.82	119	3927	1.63		60.00			
Asphalt.					12,104.90	3,598							
Asphalt block.					1,258.00	325							
Total					13,262.90	3,923			755.50	413.00	25.00	36.30	5.74

In and around Union Plaza about 30,600 square yards asphalt block and 630 yards granite block in addition laid by day labor; work still in progress.

TABLE F.—Repairs to asphalt pavements under contract with Brennan Construction Company (No. 392)

Street.	From—	To—	Repairs to asphalt.							New gutters.				
			New pavement.	Resurfacing.	Base.	Binder.	Old pavement removed.	Grading.	Total cost of repairs.	Vitrified block gutters.	Grading and removal of material.	Number of blocks.	Cost of blocks.	Total cost of gutters.
New Jersey avenue.	New York avenue.	N and O to P.	Square yds. 1,903.41	Square yds. 943.17	Cubic yds. 34.71	Cubic feet. 1,551.78	Cubic yds. 433.00	Cubic yds. 125.00	\$4,846.09	Square yds. 368.89	Cubic yds. 125.00	17,940	\$373.15	\$879.18
G nw.	North Capitol.	First.		1,751.36		3,474.40			1,896.42					
H nw.	Tenth.	Thirteenth.	3,625.56	32.16		22.20	930.00	100.00	7,187.01	378.85	125.00	18,335	381.37	965.97
I nw.	Eleventh.	Thirteenth.	2,851.09	109.12		133.20	719.00	50.00	5,679.17	249.14	83.00	12,050	250.64	686.48
Florida avenue nw.	Seventh.	New Jersey avenue.	4,033.11	208.42	12.00	417.00	773.00	150.00	8,488.81	436.65	145.00	21,396	456.80	1,204.63
Eleventh nw.	G.	H.	1,846.88	17.81		44.40	336.00	100.00	3,593.47	167.78	56.00	8,393	174.57	465.84
Twelfth.	Massachusetts avenue.	N.	3,161.94	203.23		355.20	790.00	30.00	6,262.65	390.93	123.00	17,857	371.43	1,034.19
Iowa circle.			7,066.53	536.42	48.87	1,683.50	1,554.00	50.00	14,789.13	536.42	154.00	20,433	436.24	1,250.56
C se.	New Jersey avenue.	First.	1,227.06				1,400.00	120.00	2,302.66	131.31	40.00	5,620	119.99	323.69
Eighth nw.	Q.	R.		1,232.54	68.00	2,382.80		8.00	1,547.23	138.82	42.00	6,030	128.74	357.03
Pennsylvania avenue (north side), intersection of Eighth se.				706.66	11.26	1,295.00	19.50		844.44	19.84		872	18.62	48.16
Ninth nw. (east side).	Rhode Island avenue.	Q.		712.38	3.00	606.80	6.50	3.50	370.57	23.53		1,023	21.84	64.77
Fifth nw.	D.	F.	640.90	1,858.21	28.16	3,892.40	107.00	110.00	3,521.00	287.51	300.00	12,506	267.00	808.36
H nw.	Fourteenth.	Fifteenth.		1,859.04	18.60	3,130.20	45.00	20.00	2,091.43	150.09	150.09	6,528	139.37	367.66
Rhode Island avenue.	New Jersey avenue.	Iowa circle.	4,236.68	13,252.64	617.00	21,614.80	447.00	165.00	24,595.16	1,248.09	208.00	54,835	1,170.73	3,197.87
Fifth nw.	Rhode Island avenue.	Florida avenue.	1,562.69	100.56	9.40	226.00	250.00	110.00	2,994.47	175.65	40.00	8,080	168.06	452.51
R nw.	Seventh.	Ninth.	1,406.63	201.47	9.44	403.00	261.00	40.00	3,050.70	193.41	32.00	8,440	180.19	483.75
Massachusetts avenue (south side).	Fourth.	Seventh.		3,060.56	74.00	4,847.00	35.00	20.00	3,593.87	296.67	35.00	12,905	275.52	761.19
North Carolina avenue.	Fifth.	Sixth.	776.37				840.00	30.00	1,410.38	62.92		2,806	59.92	141.72
Q nw.	Connecticut avenue.	Twentieth.	625.00				26.00	18.00	1,113.59	52.39	9.00	2,600	55.51	157.33
Iowa circle.	G.	Fourteenth.	224.86	1,262.05	20.00	1,872.37	37.00	20.00	2,320.58	141.53	24.00	6,118	130.62	369.33
F nw.	G.	K.	186.37	3,547.59	187.12	6,571.20	53.00	22.00	5,371.93	388.03	35.00	17,050	364.02	806.06
Eighth nw.	Seventh.	Tenth.	4,056.06	91.95	5.00	110.00	1,380.00	50.00	8,921.01	445.07	74.00	19,805	422.84	1,254.93
Fourteenth nw.	F.	New York avenue.	4,703.19	82.65		124.00	1,127.00	134.00	10,481.12	250.47	45.00	10,895	232.61	741.32
Fourteenth (east side).	Euclid.	Fairmont.	687.34	146.20	.60	177.60	167.60	19.00	1,476.97	62.53	10.00	2,760	58.92	157.10
Thirteenth nw.	Pennsylvania avenue.	B.	3,576.48	3.17			762.00	236.00	7,318.84	273.24	139.00	12,055	257.59	778.72
Fifteenth nw.	Q.	S.	4,354.23	350.30	7.86	399.60	993.00	40.00	9,220.51	485.71	182.00	21,128	451.08	1,203.37
C nw.	Sixth.	Seventh.	50.70	1,423.11	25.50	1,665.00	21.70	24.00	1,761.00	132.21	172.90	5,800	123.83	376.87
			52,803.08	33,692.77	1,180.52	33,499.45	13,521.33	1,794.50	147,050.21	7,487.08	2,348.99	334,260	7,091.20	19,388.59

## Repairs by Lutz heater system.

Street.	From—	To—	Square yards.	Cubic feet.	Cost per unit.
Seventeenth nw.	Pennsylvania avenue.	New York avenue.	4,022.00	3,623.90	Cents. 70
Fifteenth nw.	do.	do.	5,483.00	4,929.50	70
F nw.	First.	Second.	1,638.00	1,608.00	70
			11,143.00	10,161.40	7,112.98

90,390 cubic feet surface, at 44 cents.  
63,830.55 cubic feet binder, at 25 cents

TABLE E.—Statement of work on elimination of grade crossings for year ended June 30, 1910.

To—	Section.	Kind of pavement.	Contract work.										Material.			Cost of material.	Cost of extra work and day labor.	Amount of contract work.	Total cost of work.	Contractor.		
			Square yards.	Length.	No. of contract.	Price per square yard.	Ordinary grading.	Macadam grading.	Old cobble and granite removed.	Old curb removed.	Curb set.	Curb reset.	Vitrified block gutters.	Vitrified block.	8 by 8 inch curb.						Circular curb.	
				Feet.			Cubic yds.	Cubic yds.	Square yds.	Linear ft.	Linear ft.	Linear ft.	Square yds.		Linear ft.	Linear ft.						
North Capitol	Northwest	Asphalt	1,728.51	434	3927	\$1.63																
	do.	do.	2,469.38	627	3927	1.63	307.00	311.00			1,315.00	47.47	2,108	Linear ft.	1,250.90	64.90	\$1,191.17	\$489.75	\$2,941.45	\$4,622.37	Brennan Construction Co.	
Second	Northwest	do.	1,083.59	410	3927	1.63	5.00				1,419.00	75.71	3,327	Linear ft.	1,363.63	55.44	1,280.72	350.00	4,508.09	6,138.81	Do.	
Massachusetts avenue	Northwest	do.	511.95	281	4357	1.451	126.50	0.00				155.36	7,000				147.45	175.57	1,994.15	2,319.17	Do.	
Second	Northwest	do.	2,281.58	677	3927	1.63	13.00					118.22	5,290				378.48	622.99	1,109.38	1,487.66	Cranford Paving Co.	
Union Plaza	do.	do.	1,479.72	450	3927	1.63				36.30	618.00	7.66	55.36				828.41	9.42	4,163.75	5,615.65	Brennan Construction Co.	
Eckington place	do.	Asphalt block	1,258.00	325							1,476.87		13.76						2,533.90	6,407.13	Do.	
Delaware avenue	Southwest	Asphalt	2,026.35	600	3927	1.63	300.00		25.00		620.73	463.53	153.14	a 25,800	1,423.59	53.58	2,862.86	1,010.37	4,490.32	4,740.63	Day labor.	
	do.	do.	423.82	119	3927	1.63		60.00				1,728	39.73			86.46	250.31	917.86	954.75	4,740.63	Brennan Construction Co.	
			12,104.90	3,598																		
			1,258.00	325																		
			13,262.90	3,923					755.50	418.00	25.00	36.30	5,749.28	729.31	906.91	66,290	4,908.38	318.87	6,978.59	2,648.68	22,658.90	32,286.17

block and 630 yards granite block in addition laid by day labor; work still in progress.

a Asphalt block.

TABLE F.—Repairs to asphalt pavements under contract with Brennan Construction Company (No. 3927) for the year ending June 30, 1910.

To—	Repairs to asphalt.							New gutters.					Curb work.					Total cost of street.	Repairs completed.	Original pavement.			
	New pavement.	Resurfacing.	Base.	Binder.	Old pavement removed.	Grading.	Total cost of repairs.	Vitrified block gutters.	Grading and removal of material.	Number of blocks.	Cost of blocks.	Total cost of gutters.	Old curb removed.	Curb set.	Curb reset.	Cost of curb.	Total cost of curb work.			Character of pavement.	Year laid.	Contractor.	
N and O to P.	Square yds. 1,903.41	Square yds. 943.17	Cubic yds. 34.71	Cubic feet. 1,551.78	Cubic yds. 433.00	Cubic yds. 125.00	\$4,846.09	Square yds. 368.89	Cubic yds. 125.00	17,940	\$373.15	\$879.18	Linear ft. 1,337.00	Linear ft. 1,396.42	Linear ft. 61.15	\$1,130.00	\$1,786.51	\$7,511.78	May 7, 1909	Coal-tar distillate.	1887	H. L. Cranford.	
First	1,751.36	1,751.36		3,474.40			1,896.42										1,896.42	1,896.42	1,896.42	May 18, 1909	do.	1887	Barber Asphalt Paving Co.
Thirteenth.	3,625.56	32.16		22.20	930.00	100.00	7,187.01	378.85	125.00	18,335	381.37	965.97	1,553.00	1,553.29	163.02	1,269.92	2,037.00	10,189.98	June 16, 1909	Coal tar, 1872, resurfacing.	1889	Cranford Paving Co.	
Thirteenth	2,851.09	109.12		133.20	719.00	50.00	5,679.17	249.14	83.00	12,050	250.64	686.48	351.33	350.31	7.37	288.82	466.67	6,832.32	do.	Coal tar.	1872	Abbot Paving Co.	
New Jersey avenue.	4,033.11	208.42	12.00	417.00	773.00	150.00	8,488.61	436.65	145.00	21,396	456.80	1,204.63	2,091.00	2,034.36	241.37	1,667.83	2,730.60	12,424.04	July 28, 1909	Resurfaced.	1877	Abbot Paving Co.	
H.	1,846.88	17.81		44.40	336.00	100.00	3,593.47	167.78	56.00	8,393	174.57	465.84	13.00	10.50	397.00	10.71	129.01	4,188.32	June 16, 1909	Asphalt, bituminous base.	1888	Barber Asphalt Paving Co.	
N.	3,161.94	203.23		355.20	790.00	30.00	6,262.65	390.93	123.00	17,857	371.43	1,034.19	29.32	29.32		25.77	49.52	7,346.36	July 3, 1909	Coal-tar vulcanite.	1875	Crawford & Hoffman.	
	7,006.53	536.42	48.87	1,683.50	1,554.00	50.00	14,789.13	536.42	154.00	20,433	436.24	1,250.56	464.06	162.22	27.23	209.15	1,704.88	17,744.57	Aug. 31, 1909	Abbot coal tar.	1873	J. P. Cranford & Co.	
First	1,227.06				1,400.00	120.00	2,302.66	131.31	40.00	5,620	119.99	323.69	381.03	381.03	36.65	303.37	488.90	3,115.25	Sept. 18, 1909	Resurfaced.	1885	Cranford Paving Co.	
R.	1,227.06	1,232.54	68.00	2,382.80		8.00	1,547.23	138.82	42.00	6,030	128.74	357.03	407.65	407.65	52.50	303.37	488.90	3,115.25	Sept. 20, 1909	Asphalt block.	1884	Maloney & Knight.	
		706.66	11.26	2,382.80	19.50		844.44	19.84		872	18.62	48.16	10.00	8.05	81.07	13.11	36.28	296.51	Sept. 25, 1909	Asphalt hydraulic base.	1883	Barber Asphalt Paving Co.	
Q.		712.38	3.00	606.80	6.50	3.50	370.57	23.53		1,023	21.84	64.77					55.97	491.31	Oct. 9, 1909	do.	1883	Do.	
F.	1,440.90	1,858.21	28.16	3,892.40	107.00	110.00	3,521.00	287.51	300.00	12,506	267.00	808.36	444.00	444.19	392.90	372.22	658.24	4,987.00	Oct. 13, 1909	do.	1885	Do.	
Fifteenth.	1,859.04	1,859.04	18.60	3,130.20	45.00	20.00	2,091.43	150.09	150.09	6,528	139.37	367.66			189.40		57.15	2,516.24	Oct. 14, 1909	do.	1884	Do.	
																					1882	H. L. Cranford, Ninth to Iowa circle.	
Iowa circle.	4,236.08	13,252.64	617.00	21,614.80	447.00	165.00	24,595.16	1,248.09	208.00	54,835	1,170.73	3,197.87	5,393.00	5,393.08	1,177.87	4,656.59	7,625.71	35,418.74	Jan. 26, 1910	do.	1883	Barber Asphalt Paving Co.	
																					1888	Fifth to Ninth. Barber Asphalt Paving Co. New Jersey avenue to Fifth.	
Florida avenue.	1,562.69	100.56	9.40	226.00	250.00	110.00	2,994.47	175.65	40.00	8,080	168.06	452.51		5.40	962.93	12.15	299.41	3,746.39	July 8, 1909	do.	1889	Cranford Paving Co.	
Ninth.	1,406.63	201.47	9.44	403.00	261.00	40.00	3,050.70	193.41	32.00	8,440	180.19	483.75	713.60	732.89	197.46	591.09	1,007.67	4,542.12	Nov. 2, 1909	do.	1888	Do.	
Seventh.		3,060.56	74.00	4,847.00	35.00	20.00	3,593.87	296.67	35.00	12,905	275.52	761.19			226.00		107.60	4,462.66	Jan. 21, 1910	do.	1881	Cranford & Filbert.	
Sixth.	776.37			840.00	30.00	1,410.38	62.92			2,806	59.92	141.72	15.00	12.29	184.20	3.92	47.02	1,599.12	Nov. 10, 1909	Asphalt block.	1890	Patrick Maloney.	
Twentieth.	625.00			26.00	18.00	1,113.59	52.39		9.00	2,600	55.51	157.33			264.51		92.40	1,363.52	Nov. 22, 1909	Coal-tar vulcanite.	1875	Cranford & Hoffman.	
Fourteenth.	224.86	1,262.05	20.00	1,872.37	37.00	20.00	2,320.58	141.53	24.00	6,118	130.62	369.33	725.00	725.36	98.50	590.33	965.02	3,654.93	Nov. 17, 1909	Asphalt hydraulic base.	1883	Barber Asphalt Paving Co.	
K.	186.37	3,547.59	187.12	6,571.20	53.00	22.00	5,371.93	388.03	35.00	17,050	364.02	806.06	43.00	6.30	1,125.65	7.85	419.68	6,597.67	May 2, 1910	do.	1883	Do.	
Tenth.	4,056.06	91.95	5.00	1,380.00	50.00	8,921.01	445.07	74.00	19,805	422.84	1,254.93	2,060.53	2,060.33	296.33	1,684.31	2,757.56	12,933.50	May 19, 1910	Abbot coal tar.	1872	Abbot Paving Co.		
New York avenue.	4,703.19	82.65		124.00	1,127.00	134.00	10,481.12	250.47	45.00	10,895	232.61	741.32	748.62	748.46	497.66	619.24	1,159.85	12,382.29	Sept. 14, 1909	Resurfaced.	1880	H. L. Cranford.	
Fairmont.	687.34	146.20	.60	177.60	167.60	19.00	1,476.97	62.53	10.00	2,760	58.92	157.10			76.00		27.46	1,661.53	June 2, 1910	Coal-tar vulcanite.	1873	L. S. Filbert.	
B.	3,576.48	3.17		762.00	236.00		7,318.84	273.24	139.00	12,055	257.59	778.72			312.22		158.80	8,256.36	May 10, 1910	Asphalt bituminous base.	1889	Barber Asphalt Paving Co.	
																					1885	Cranford & Hoffman.	
S.	4,354.23	350.30	7.86	399.60	993.00	40.00	9,220.51	485.71	182.00	21,128	451.08	1,203.37	1,210.20	1,200.72	804.58	986.87	1,814.17	12,238.05	Dec. 8, 1909	Resurfaced.	1887	Cranford Paving Co.	
Seventh.	50.70	1,423.11	25.50	1,665.00	21.70	24.00	1,761.00	132.21	172.90	5,800	123.83	376.87	62.00		713.68		163.30	2,301.17	Apr. 8, 1910	Scharf coal tar.	1875	W. C. Murdock.	
																					1887	H. L. Cranford.	
	52,803.08	33,692.77	1,180.52	33,499.45	13,521.33	1,794.50	147,050.21	7,487.08	2,348.99	334,260	7,091.20	19,388.59	18,071.36	17,974.39	8,596.25	14,477.79	27,142.89	193,531.69		Asphalt hydraulic base.	1885	Barber Asphalt Co.	

Repairs by Lutz heater system.

Minor repairs.

From—	To—	Square yards.	Cubic feet.	Cost per unit.
Pennsylvania avenue.	New York avenue.	4,022.00	3,623.90	Cents. 70
do.	do.	5,483.00	4,929.50	70
First.	Second.	1,638.00	1,608.00	70
		11,143.00	10,161.40	7,112.98

90,390 cubic feet surface, at 44 cents.  
63,830.55 cubic feet binder, at 25 cents.\$39,771.60  
15,957.64  
55,729.24

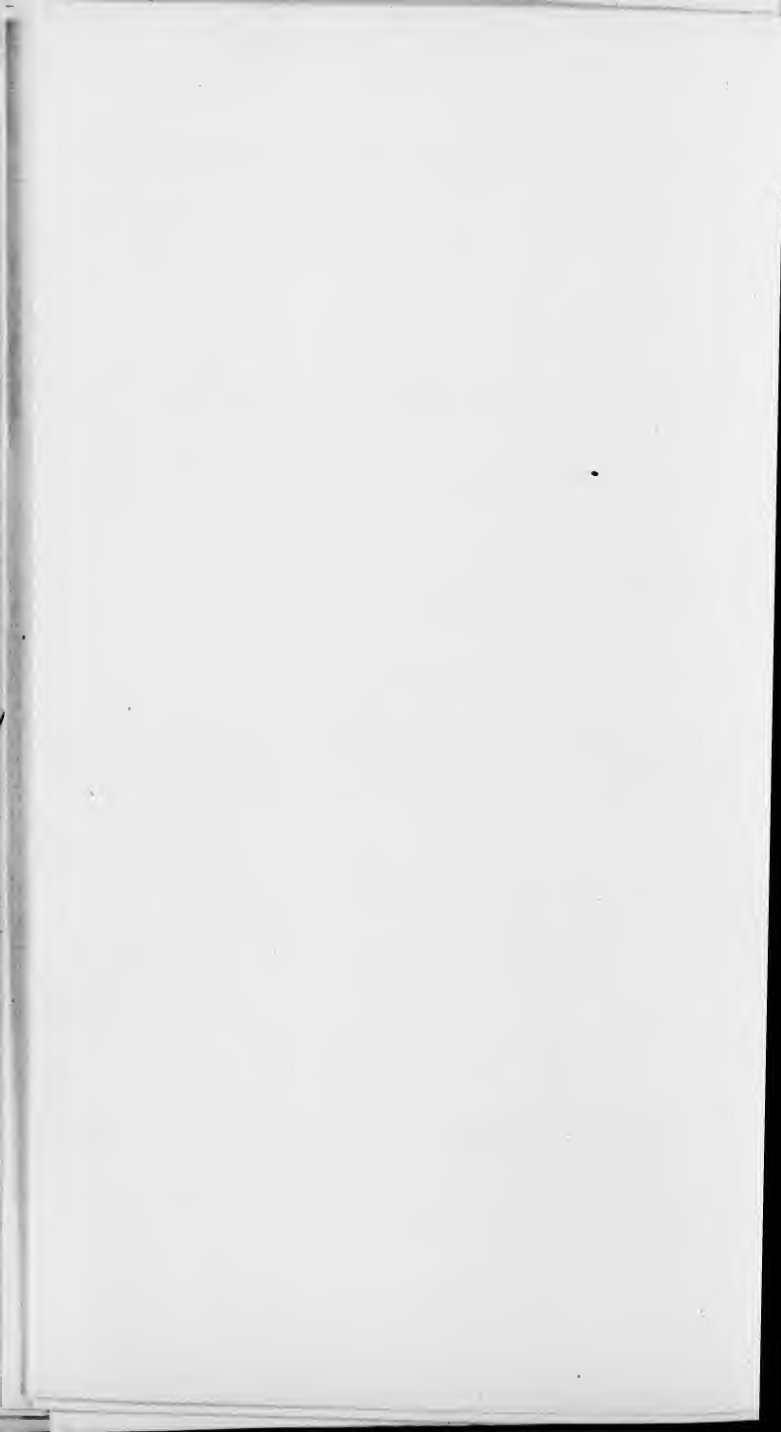




TABLE G.—Charges against street railroads.

## WASHINGTON RAILWAY AND ELECTRIC COMPANY.

Street.	From—	To—	Amount.
<i>Work in connection with resurfacing and paving.</i>			
Fourteenth nw.....	F.....	New York avenue.....	\$730.23
Rhode Island avenue.....	New Jersey avenue.....	Iowa circle.....	150.96
Ninth nw.....	Q.....	Rhode Island avenue.....	57.86
First se.....	D.....	E.....	5,135.22
G nw.....	North Capitol.....	First.....	1,476.10
Florida avenue ne.....	East of Eckington place.....	P.....	1,012.33
New Jersey avenue.....	O.....	Seventh.....	10.63
Massachusetts avenue.....	Fourth.....	F.....	263.43
Fifth nw.....	D.....	Fifteenth.....	475.73
H nw.....	Seventh.....	H.....	279.50
Eleventh nw.....	G.....	Massachusetts avenue.....	466.67
G nw.....	New Jersey avenue.....		986.06
<i>Minor repairs various streets.</i>			
19,191.90 cubic feet binder, at 25 cents.....			\$4,797.98
20,460 cubic feet asphalt surface, at 44 cents.....			9,002.40
			13,800.38
			24,845.10

## CAPITAL TRACTION COMPANY.

<i>Work in connection with resurfacing and paving.</i>			
Seventh nw.....	Q.....	R.....	\$2,012.96
Fourteenth, east side.....	Euclid.....	Fairmont.....	120.87
Florida avenue ne.....	East of Eckington place.....		231.70
New Jersey avenue.....	O to P and New York avenue to N.....		416.43
Pennsylvania avenue se., intersection of Eighth.....			291.22
P nw.....	Iowa circle.....	Fourteenth.....	16.24
First ne.....	C.....	D.....	3.14
F ne.....	Second.....	Eighth.....	16,413.41
<i>Minor repairs various streets.</i>			
1,742.70 cubic feet binder, at 25 cents.....			\$435.67
1,960 cubic feet asphalt surface, at 44 cents.....			802.40
			1,298.07
			20,804.04

## WASHINGTON, ALEXANDRIA AND MOUNT VERNON COMPANY.

<i>Work in connection with resurfacing and paving.</i>			
Thirteenth nw.....	Pennsylvania avenue.....	B.....	\$102.75
<i>Minor repairs.</i>			
170.22 cubic feet binder, at 25 cents.....			\$42.55
164 cubic feet asphalt surface, at 44 cents.....			72.16
			114.71
			217.46

TABLE H.—Work done by day labor under the appropriation for "Repairs to streets, avenues, and alleys," July 1, 1909, to June 30, 1910.

Brick sidewalks relaid.....square yards..	11,089	Granite block laid.....square yards..	1,745
Asphalt block repaved.....do.....	17,371	Asphalt tile relaid.....do.....	348
Asphalt block paved.....do.....	5,875	Cement walk repaired.....do.....	1,727
Vitrified block repaved.....do.....	3,338	Grading.....cubic yards..	2,196
Cobble paved.....do.....	4,435	Graveling.....square yards..	1,450
Curb reset.....linear feet..	775	Dangerous holes repaired.....	3,655
Flag laid.....do.....	125	Labor.....	\$27,198.44
Flag relaid.....do.....	2,809	Material.....	\$9,905.68

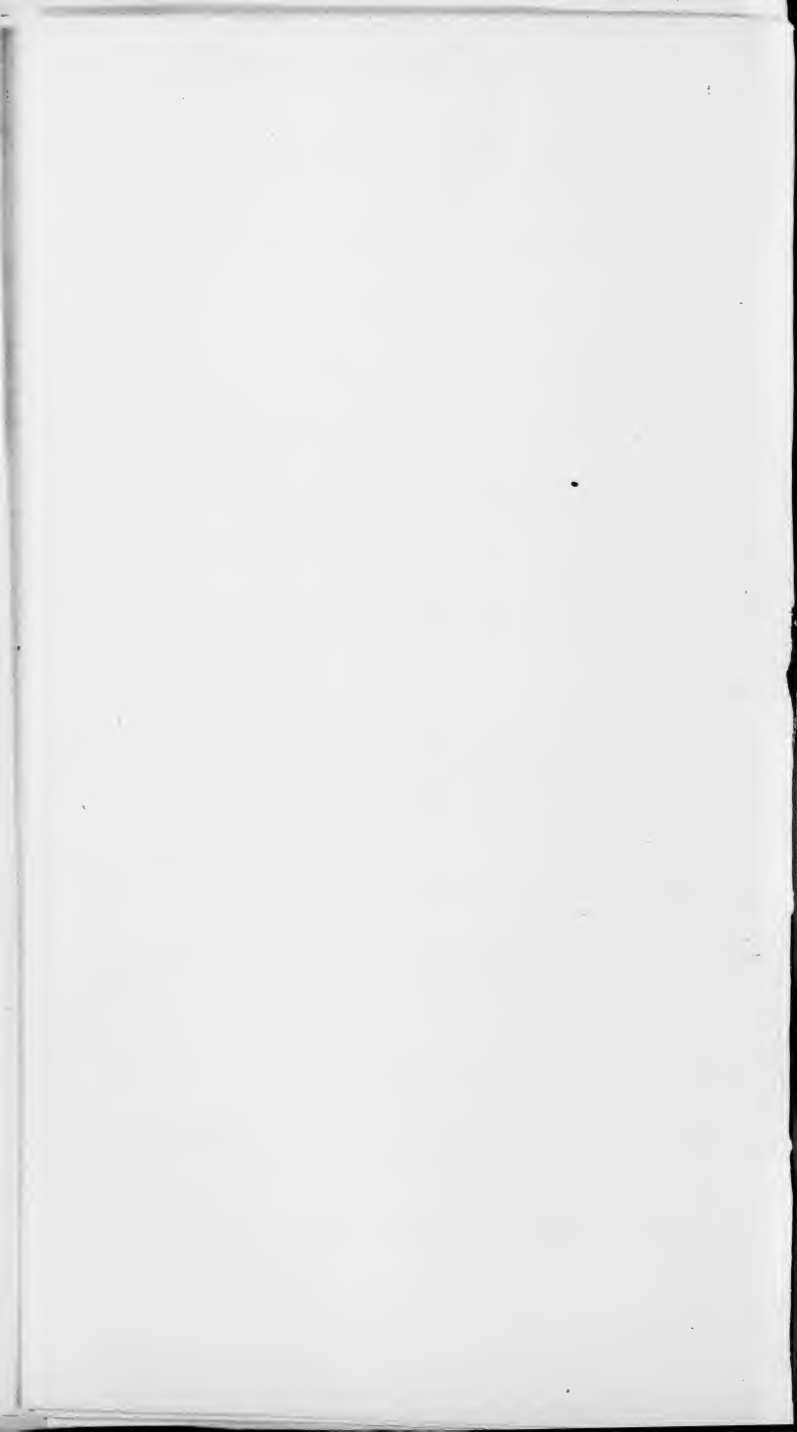


TABLE G.—Charges against street railroads.  
WASHINGTON RAILWAY AND ELECTRIC COMPANY.

Street.	From—	To—	Amount.
<i>Work in connection with resurfacing and paving.</i>			
Fourteenth nw.....	F.....	New York avenue.....	\$730.23
Rhode Island avenue.....	New Jersey avenue.....	Iowa circle.....	150.96
Ninth nw.....	Q.....	Rhode Island avenue.....	57.86
First se.....	D.....	E.....	5,135.22
G nw.....	North Capitol.....	First.....	1,476.10
Florida avenue ne.....	East of Eckington place.....	P.....	1,012.33
New Jersey avenue.....	O.....	Seventh.....	10.63
Massachusetts avenue.....	Fourth.....	F.....	263.43
Fifth nw.....	D.....	Fifteenth.....	475.73
H nw.....	Seventh.....	H.....	279.50
Eleventh nw.....	G.....	Massachusetts avenue.....	466.67
G nw.....	New Jersey avenue.....		986.06
<i>Minor repairs various streets.</i>			
19,191.90 cubic feet binder, at 25 cents.....		\$4,797.98	
20,460 cubic feet asphalt surface, at 44 cents.....		9,002.40	
			13,800.38
			24,845.10

## CAPITAL TRACTION COMPANY.

<i>Work in connection with resurfacing and paving.</i>			
Seventh nw.....	Q.....	R.....	\$2,012.96
Fourteenth, east side.....	Euclid.....	Fairmont.....	120.87
Florida avenue ne.....	East of Eckington place.....		231.70
New Jersey avenue.....	O to P and New York avenue to N.....		416.43
Pennsylvania avenue se., intersection of Eighth.....			291.22
P nw.....	Iowa circle.....	Fourteenth.....	16.24
First ne.....	C.....	D.....	3.14
F ne.....	Second.....	Eighth.....	16,413.41
<i>Minor repairs various streets.</i>			
1,742.70 cubic feet binder, at 25 cents.....		\$435.67	
1,900 cubic feet asphalt surface, at 44 cents.....		862.40	
			1,298.07
			20,804.04

## WASHINGTON, ALEXANDRIA AND MOUNT VERNON COMPANY.

<i>Work in connection with resurfacing and paving.</i>			
Thirteenth nw.....	Pennsylvania avenue.....	B.....	\$102.75
<i>Minor repairs.</i>			
170.22 cubic feet binder, at 25 cents.....		\$42.55	
164 cubic feet asphalt surface, at 44 cents.....		72.16	
			114.71
			217.46

TABLE H.—Work done by day labor under the appropriation for "Repairs to streets, avenues, and alleys," July 1, 1909, to June 30, 1910.

Brick sidewalks relaid.....	square yards..	11,089	Granite block laid.....	square yards..	1,745
Asphalt block repaved.....	do.....	17,371	Asphalt tile relaid.....	do.....	348
Asphalt block paved.....	do.....	5,875	Cement walk repaired.....	do.....	1,727
Vitrified block repaved.....	do.....	3,338	Grading.....	cubic yards..	2,196
Cobble paved.....	do.....	4,435	Graveling.....	square yards..	1,450
Curb reset.....	linear feet..	775	Dangerous holes repaired.....		3,655
Flag laid.....	do.....	125	Labor.....		\$27,198.44
Flag relaid.....	do.....	2,809	Material.....		\$9,905.68

TABLE I.—Regular permit, 1910.

Job No.	Location.	For whom done.	Grading.	Cement sidewalk.	Curb reset.	Curb set.			Vitrified block paved.	Brick sidewalk paved.	Cost.
						6 by 20 inches.	8 by 8 inches.	Old.			
			<i>Cu. yds.</i>	<i>Sq. yds.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Sq. yds.</i>	<i>Sq. yds.</i>	
2000	Minor street, between M and N, South Capitol sw.	Appleton P. Clark, Jr.		1,170.05	117.00	1,297.84					\$2,727.18
2001	St. Theresa's School, V street se., between Fourteenth and Fifteenth streets.	Chas. J. Cassidy Co.		208.27							273.35
2002	East side Monroe street nw., north of Monroe street.	Chas. E. Wise		397.79							522.10
2003	Georgia avenue, front of car barn, Brightwood.	Washington Railway and Electric Co.		87.00							114.18
2004	East side Fourteenth street nw., from Kenyon street to Park road, and north side Kenyon street, from Fourteenth street eastward.	W. F. Garber		296.27							279.58
2006	Nineteenth street and Park road, lots 28 to 46.	Middaugh, Shannon & Co.		353.29	32.71	363.60					1,393.62
2007	North side Lamont street, from Nineteenth street eastward.	do.		78.95		121.10					245.26
2008	1710 M street nw.	A. W. Lukei		29.75							37.48
2009	1113 Ninth street nw.	W. P. Metcalf		20.85	29.35						34.53
2010	3408 N street nw.	W. n. M. Bornheim		19.26	20.00						29.14
2012	North side Q street nw., east of Twenty-eighth street.	Howard Hinekey				60.00					93.35
2013	do.	Thos. Hyde				50.00					77.79
2014	3128 M street nw.	Adolph Baer & Sons		28.91	14.00						40.05
2015	3130 M st nw.	Isaac B. Nordlinger		26.20	11.50						36.11
2017	Northwest corner Wisconsin avenue and M street nw.	Samuel Artz		223.11	67.00		91.48				379.68
2018	3124-3126 M street nw.	H. Ottinger		29.05	14.00						40.91
2020	Sixteenth street side, lot 40; Sixteenth street se., between A and B streets.	Chas. E. Banes		57.87							72.91
2021	West side New Hampshire avenue, south of Rock Creek Church road.	Louis Hartig		84.60							106.60
2022	O street side, northeast corner North Capitol and O streets.	Robert A. Gibb		140.58	6.50						144.08
2023	1622 H street nw.	Owen Owen		24.95	15.80						34.75
2024	1315 New York avenue	do.		14.11							17.78
2025	Lincoln road ne., between Quincy and R streets.	Anna J. Paine		211.63							217.01
2026	South half square 931 and alley	Geo. S. Cooper		631.28					315.00		1,620.72
2027	Both sides Lamont street, between Eighteenth and Nineteenth streets.	Kennedy Bros. (Incorporated)		776.23		1,110.42					2,318.70
2028	244 Seventh street nw.	S. Rosenthal		25.76	21.50						39.07
2029	2101 W yoming avenue.	A. B. Mullett & Co.		85.88							108.21
2030	First street side, 908 First street ne.	James A. Cahill		81.19							102.30

2031	East side New Hampshire avenue, between Newton and Otis streets.	Dungan Heating and Ventilating Co.	229.60	9.30			291.54
2032	1332 F street nw.	Ambrose Williams.	17.16	17.75			25.35
2034	1132 Seventh street nw.	S. Schlossburg.	38.35	32.40			39.20
2035	Kalamazoo road, between Twenty-third street and Connecticut avenue.	Wm. F. Lemon.	45.13		50.10		121.82
2036	South side B street ne., between Fifteenth and Sixteenth streets.	Geo. T. Klipstun.	64.80				86.18
2037	Seventh street side, northeast corner Seventh and E streets nw.	Dime Savings Bank.	119.47				125.64
2038	South side Fuller street, between Sixteenth and Seventeenth streets.	Fred Drew.		164.93	18.07		248.26
2039	1420 Wisconsin avenue.	J. Paul Smith.					35.02
2040	608 Ninth street nw.	John J. Noonan.		27.20			33.77
2041	East side Fourteenth street se., between V and W streets.	Geo. S. King.	80.35	9.42	148.60		160.41
2042	Southwest corner Eighteenth and Monroe streets	Chas. Schafer.	180.86				228.55
2044	Northwest corner Eighteenth street and Park road.	Byron S. Adams.	187.02	20.40			240.68
2045	South side E street nw., between Ninth and Tenth streets.	D. A. Sanford.	24.28				30.80
2046	1750 and 1752 Park road.	L. E. Breuninger.	44.57				60.34
2047	P street side, southeast corner Sixteenth and P streets nw.	Robt. S. Woodward.	149.84				149.07
2048	East side New Hampshire avenue, from Otis street north.	Alex. Miller.	258.27		9.10		329.71
2050	South side D street ne., between First and Second streets.	The Brennan Construction Co.	91.14	86.00			137.72
2053	3123 M street nw.	Gornley, Poynton & Co.			25.00		37.44
2043	Twenty-eighth street nw., south of Cathedral avenue.	L. E. Breuninger.		115.45			150.57
2052	Alley, square 1732.	Louis Perna.	385				109.15
2055	South side Rock Creek Church road, from Georgia avenue to Warder street.	Kennedy Bros. (Incorporated).	197	30.49	819.86		1,133.30
2061	North half of east alley, square 2003.	Kennedy Bros.	800				341.11
2066	2105 Pennsylvania avenue nw.	Paul J. Smith.		9.00	27.16		38.88
2070	North half, square 931.	Geo. S. Cooper.	72			312.00	578.86
2019	3632 N street nw.	James Sullivan.				40.00	17.32
2068	North side Clifton street, from Eleventh to Twelfth streets.	Pumphrey & Palmer.	167.17	242.00			286.02
2074	Both sides Twelfth street nw., between Clifton and Euclid streets.	Chas. W. King.	564.28	851.07			1,793.53
2054	East side Fourteenth street nw., between Decatur and Delahfield streets; and west side Iowa avenue, between Decatur and Delahfield streets, C, D, and Seventeenth street sides lot 32, square 173.	B. F. Saul Co.	393.10				497.40
2056	3112-3114 N street nw.	Kennedy Bros. (Incorporated).	622.41		400.04	209.56	1,283.24
2058	2311 Massachusetts avenue nw.	Wm. King.	48.44				61.03
2059	1201-1211 Clifton street nw.	F. B. Moran.	12.95				16.32
2060	Q street ne., between Eckington place and First street.	Chas. J. Walker.	87.39	126.00			146.61
2062		S. C. McDowell.	115.64				115.05

TABLE I.—Regular permit, 1910—Continued.

Job No.	Location.	For whom done.	Grading.	Cement sidewalk.	Curb set.			Vitrified block paved.	Brick sidewalk paved.	Cost.
					6 by 20 inches.	8 by 8 inches.	Old.			
			Cu. yds.	Sq. yds.	Lin. ft.	Lin. ft.	Lin. ft.	Sq. yds.	Sq. yds.	
2063	Minnesota avenue and Nicholson street.	Panfilo Lucento.		91.69						\$115.53
2064	West side Fourteenth street nw., front lots 2 to 11, square 2691, and lots 2 to 3, square 2693.	Geo. C. Humphrey.		374.40						482.72
2069	East side Eighth street nw., between Varum and Webster streets.	Geo. H. Dierkoph.		46.73						58.88
2071	North half, square 481.	Geo. S. Cooper.		600.91	18.84	324.00	239.21			1,081.08
2072	South side of N. street nw., between Twenty-third and Twenty-fourth streets.	Elia Leary.	6	10.66						18.36
2073	Eighteenth street nw., between Kenyon and Kilbourne streets.	James Martin.		361.62		256.87				778.36
2076	Lincoln road and Randolph street.	E. L. Redfield.		102.54						104.11
2077	718 Seventh street nw.	Simmons B. Stanley.		27.05						37.40
2078	1063-1067 Wisconsin avenue.	E. T. Simpson.		47.71						67.37
2079	Sixteenth street nw., between Monroe and Newton streets.	W. S. Minnix.		88.90						115.63
2080	North side Rhode Island avenue nw., between Second and Third streets.	Clarence B. Hight.		142.00						143.91
2081	Northwest corner Sixteenth and Monroe streets.	A. L. Sturtevant.		174.74						233.40
2082	South side Olive street nw., lots 21 to 25.	Chas. E. Tibby.		18.50	129.40					280.94
2083	West side Sixth street nw., between Monroe and Newton streets.	Martha F. Harman.		20.35						25.64
2085	West side Warren street ne., B street to alley.	C. A. Didden & Son.		81.17	18.62					106.17
2086	Seventh street nw., between Shepherd and Taylor streets.	B. H. Warner.		194.23						256.96
2087	North side Wyoming avenue, between Connecticut avenue and Twenty-third street.	Boyer & Smith.		27.06						68.83
2088	3406 N street nw.	James Einstein.		17.54						22.10
2089	1650 to 1658 Twenty-ninth street.	Ketchum & Carmody.		106.57						108.13
2090	Rock Creek Church road from Warder street to Park place.	Kennedy Bros. (Incorporated).		908.94	10.00	494.80				1,822.92
2092	First and Q streets, sides lots 28 and 205 to 208.	Ellerson & Wemple.		395.64						395.71
2093	North Carolina avenue ne. and East Capitol street.	Wm. Murphy.		194.32						198.63
2095	Seventeenth street side of 1700 Massachusetts avenue nw.	John F. Wilkins.		130.11	11.12	150.06				364.49
2097	Sherman avenue, front lot 322, square 2882.	Hugh Mackenzie.		36.67						46.20
2098	Northwest corner Eighth street and Virginia avenue se.	Clarence F. Donohue.		60.50						78.33
2099	1833 to 1837 Newton street.	M. J. Keane.		33.33						44.10



TABLE K.—*Assessment work, 1910.*

Job No.	Location.	Grading.	Cement sidewalk.	Curb reset.	Curb set.			Asphalt block paved.	Cobble.	Flag laid.	Brick sidewalk relaid.	Cost.
					6 by 20 inches.	8 by 8 inches.	Old.					
		<i>Cu. yds.</i>	<i>Sq. yds.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Sq. yds.</i>	<i>Sq. yds.</i>	<i>Lin. ft.</i>	<i>Sq. yds.</i>	
3001	Alley, square 9836.	2,007.0						1,000.00				\$2,195.01
3002	Alley, square 1063.	1,447.0		26.00	9.42			1,054.00				2,234.93
3005	Alley, square 520.	124.0						565.00			6.00	1,077.13
3008	Alley, square 754.							1,438.00				2,598.02
3011	East part of alley, square 144.											
3010	Alley, square 2000.	1,900.0					60.00	2,110.00				5,178.61
3012	Alley, square 521.							181.00				327.19
3014	Alley, square 91.	41.0		42.00		18.84		202.00			11.00	461.47
3015	Alley, square 303.	125.0		12.00				388.00				893.34
3020	Alley, square 304.	376.0						640.00				1,414.07
3023	Alley, square 1009.	1,396.0		28.00				2,793.00				5,319.57
3025	East side Eleventh street n.w., from Otis street to Spring road.					449.54						564.85
3026	Both sides K street se., from Fourth to Fifth streets.						548.00					148.31
3028	Both sides K street se., from Second to Third streets.						490.00					118.13
3029	North side Park road n.w., between Eleventh street and New Hampshire avenue and west side New Hampshire avenue, between Park road and Monroe street.											
3031	West side Sherman avenue, between Kenyon and Lamont streets.		378.28	39.00	151.95	17.90						702.73
3032	East side Tenth street n.w., between Otis and Spring road.		253.10	6.50	304.80							687.96
3033	North side Randolph place n.w., between First and Second streets.		43.33			65.10						136.84
3041	South side Park street, lot 67, square 2906.				280.61							627.30
3042	South side Kearney street ne., between Tenth and Twelfth streets.	13.0	43.60									61.08
3046	Both sides Rhode Island avenue n.w., between New Jersey avenue and Iowa Circle.	25.0	277.40			4,539.34						375.90
3050	West side New Jersey avenue, from N to Third streets and Third street from New Jersey avenue to M street.											6,207.62
3055	Alley, square 1056.		723.55					563.00	361.00			721.73
3058	North side Florida avenue n.w., between Eleventh and Fourteenth streets.											2,108.08
3067	Both sides V street se., from Nichols avenue to Fourteenth street.					1,342.03						1,787.12
3068	Both sides U street se., from Nichols avenue to Fourteenth street.						880.20					303.65
							2,007.93					700.92





TABLE K.—Assessment work, 1910—Continued.

Job No.	Location.	Grading.	Cement sidewalk.	Curb reset.	Curb set.			Vitrified block paved.	Asphalt block paved.	Cobble.	Flag laid.	Brick sidewalk relaid.	Cost.
					6 by 20 inches.	8 by 8 inches.	Old.						
		Cu. yds.	Sq. yds.	Lin. ft.	Lin. ft.	Lin. ft.	Lin. ft.	Sq. yds.	Sq. yds.	Sq. yds.	Lin. ft.	Sq. yds.	
3129	North Capitol street from Quincy place to R street (east side).....		234.73										\$237.00
3130	West side North Capitol street from Quincy street to R street.....		249.07										251.32
3131	East side Second street nw., from Florida avenue to Rhode Island avenue.....		398.82										430.45
3132	West side First street nw., from B to C streets.....		705.60										774.07
3137	Both sides Warder street, between Luray place and Kenyon street.....				1,010.03								1,319.86
3139	West side Park place, between Lamont street and Manor place.....				631.36		24.81						818.80
3142	East side Fourteenth street nw., from Monroe to Oak street.....												1,043.49
3147	East side Fourteenth street se., from E to G streets.....			41.07	504.55	820.47	6.28						720.86
3150	Alley, square 562.....		230.00										260.44
3157	East side Lincoln road, between Q and R streets.....		285.05										287.78
3158	North side R street nw., from Seventh street to Rhode Island avenue, and Rhode Island avenue, from R to Sixth street.....		660.59										659.30
3159	South side Rhode Island avenue nw., from Marlon street to alley, square 444.....		247.39										250.25
3160	North side Rittenhouse street, between Eighth street and Georgia avenue.....	105.0	602.07										839.83
3161	North side Park road, between Seventeenth and Mount Pleasant streets.....		122.62										154.49
3162	South side Park road, between Seventeenth and Eighteenth streets.....		201.42		727.68								1,158.11
3163	West side Allison street nw., between Eighth street and Georgia avenue.....	205.0	499.37										728.16
3164	North side Monroe street nw., between New Hampshire avenue and Tenth street.....	7.0	30.32										41.51
3165	East side Sixteenth street, between Columbia road and Irving street.....		400.22	10.80									529.08
3167	North side Wyoming avenue, between Connecticut avenue and Twenty-third street.....		363.49			106.65							397.16
3168	South side Madison street nw., from Georgia avenue to east line lot 42, square 2991.....		192.40										252.53
3169	West side Euclid street nw., between Messmore and Seventeenth streets.....		143.98	100.00			7.15						225.77





3118	East side of Twentieth street nw., between Park road and north line lot 43, square 2617, and north side Park road from Twentieth street to a point 133.5 feet east.	650.0	851.88						1,379.55
3124	East side of Connecticut avenue from Jewett street northward to south end of bridge and west side of Connecticut avenue from north end of bridge to Newark street.	1,031.0							404.12
3183	Both sides of U. S. place nw., between Thirteenth and Fourteenth streets.		863.11	1,204.30					2,409.13
3226	North side Harvard street nw., between Fourteenth and Sixteenth streets, and east side of Fifteenth street between Harvard street and Columbia road.		596.06	622.00	12.45	6.71			1,524.42
3229	South side of Columbia road, between Seventeenth street and Ontario road.		361.11						363.46
3241	Both sides Elch street nw., from G to H streets.		171.37						104.37
3243	East side of Tenth street nw., from I street to Vermont avenue and east side Vermont avenue from Tenth to U streets.		335.05						356.79
3249	North side of Seaton street nw., from First to Second streets.		173.87						172.97
3259	South side of R street nw., between Tenth and Eleventh streets.		263.79						262.43
3265	Both sides of Rhode Island avenue nw., from Seventh to Eighth streets.		688.62						689.29
3278	South side Westminster street, between Ninth and Tenth streets.		119.01	51.00					133.25
3279	North side of Rhode Island avenue nw., between New Jersey avenue and Fifth street.		395.24						395.31
3280	South side of Rhode Island avenue nw., between New Jersey avenue and Fifth street.		407.35						408.28
3281	North side of Rhode Island avenue nw., between Fifth and Sixth streets.		363.97						366.30
3282	South side of Rhode Island avenue nw., between Fifth and Sixth streets.		363.56						368.00
3283	South side of Rhode Island avenue nw., between Eighth and Ninth streets.		314.15						318.45
3284	North side of Rhode Island avenue nw., between Ninth and Tenth streets and north side of Q street between Tenth street and Rhode Island avenue.		542.42						551.50
3285	South side of Rhode Island avenue between Tenth and Q streets, and south side of Q street from Rhode Island avenue to Columbia Road.		325.58						325.96
3286	Both sides of Rhode Island avenue nw., between Tenth and Eleventh streets.		615.82						616.13
3287	North side of Rhode Island avenue nw., between Eleventh and Twelfth streets.		367.96						368.17
3288	North side of Rhode Island avenue nw., from Twelfth street to and around Iowa circle to Vermont avenue.		419.17						427.86

TABLE K.—*Assessment work, 1910—Continued.*

Job No.	Location.	Grading. <i>Cu. yds.</i>	Cement sidewalk. <i>Sq. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set.			Vitrified block paved. <i>Sq. yds.</i>	Asphalt block paved. <i>Sq. yds.</i>	Cobble. <i>Sq. yds.</i>	Flag laid. <i>Lin. ft.</i>	Brick sidewalk relaid. <i>Sq. yds.</i>	Cost.
					6 by 20 inches. <i>Lin. ft.</i>	8 by 8 inches. <i>Lin. ft.</i>	Old. <i>Lin. ft.</i>						
3298	South side of F street ne., between Sixth and Seventh streets.	.....	667.73	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$686.59
3307	West side of Sixteenth street nw., from Irving street to Park road.	.....	613.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	773.06
3332	Both sides of Ninth street nw., between T street and Florida avenue.	.....	1,006.74	17.10	.....	962.23	.....	.....	.....	.....	.....	.....	2,277.97
3333	West side of Ninth street nw., between R and S streets.	.....	453.88	9.00	.....	492.59	.....	.....	.....	.....	.....	.....	1,107.60
3334	West side of Ninth street nw., between Rhode Island avenue and R street.	.....	343.80	12.00	.....	306.45	.....	.....	.....	.....	.....	.....	743.41
3379	Both sides of S street nw., from Fifteenth to Sixteenth streets.	.....	1,056.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,050.65
3385	West side of Messmore street nw., from Fuller street to Columbia road.	.....	176.60	275.00	.....	.....	.....	.....	.....	.....	.....	.....	279.51
3004	Alley, square 342.	196.0	.....	.....	.....	.....	.....	562.00	.....	.....	.....	.....	1,021.87
3019	Alley, square 591.	342.0	.....	.....	.....	.....	.....	965.00	.....	.....	.....	.....	1,576.23
3112	Alley, square 3130.	531.0	.....	18.00	.....	9.42	.....	723.00	.....	.....	.....	.....	1,419.53
3224	Alley, square 2108.	42.0	.....	16.00	.....	.....	.....	984.00	.....	.....	.....	.....	1,687.21
		22,983.0	35,803.27	1,597.30	6,359.74	25,778.04	5,212.34	31,536.60	9,685.28	35.00	41.00	32.00	170,923.76

TABLE L.—Sidewalks and curbs, 1910.

Job No.	Location.	Cement sidewalk. <i>Sq. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set, linear feet.		Brick sidewalk relaid. <i>Sq. yds.</i>	Cost.
				6 by 20 inches.	8 by 8 inches.		
2500	Rhode Island avenue side of reservations 154-157, 158, 159.....				997.08		\$1,290.85
2501	Tenth and Eleventh streets sides of Market square, reservation between B and Little B streets.....		250.0			300.0	282.00
2502	Brightwood Park school grounds, Ninth and Ingraham streets.....	302.44					302.93
2503	East side of Fifth street nw., between D and E streets, front of Judiciary square.....	501.86			444.19		1,067.97
2504	South side of Bryant street nw., from Fourth street eastward, Mott School.....	109.68			178.33		342.60
2505	Reservation east side of North Capitol street, between Q and R streets, and west side of Lincoln road, between Q and R streets.....	237.97					233.43
2506	Massachusetts avenue and A street side of reservation 88.....	403.01	62.0	447.03			966.18
2507	Reservation Pennsylvania avenue and G street se.....	56.23					67.48
2508	East side of School street nw., between Irving and Lamont streets.....	87.00		106.00			125.60
2509	Sixth street sw., north of B street.....						117.92
2510	Peabody School, southwest corner Fifth and C streets ne.....	161.12					132.66
2511	West side of School street; between Irving and Lamont streets.....	84.83					101.80
2512	W street side of Mott School.....		8.4			103.5	21.99
2513	Public school, east side of Vermont avenue nw., between Tenth and W streets.....	120.93					114.38
2518	Sixteenth street nw., front reservation between Lamont street and Kalorama road.....	183.54					220.25
2521	Rhode Island avenue side of reservation 155.....	63.99					60.63
		2,312.60	320.4	553.03	1,619.00	163.5	5,543.87





4661	Oak street nw., Fourteenth street to Holmead place.	Grading and Improving Oak street nw.	25.60	921.55			916.82
4662	Both sides Oak street nw., between Fourteenth street and Holmead place.	do.					1,172.42
4681	Otis place and Tenth street nw.	Grading and Improving Otis place and Tenth street.					2,106.11
4682	South side Otis place, between Eleventh and Thirteenth streets.	do.	138.20				189.97
4731	Q street se., between Twenty-third and Twenty-fifth streets.	Grading and graveling Twenty-third and Q streets se.					126.75
4762	Both sides Connecticut avenue nw., from McComb to Newark streets.	Asphalt Connecticut avenue extended.	12.70	484.39			637.97
4770	First street nw., between B and C streets.	Asphalt First street nw.					55.75
4781	Second street nw., between B and C streets.	Asphalt Second street nw.					56.75
4791	Seventh street nw., between Q and R streets.	Asphalt Seventh street nw.					142.87
4792	Both sides Seventh street nw., between Q and R streets.	do.		227.83			279.49
6001	South Capitol street, between Canal street and Virginia avenue.	Elimination of grade crossings.					1,408.41
6002	V street se., between Nichols avenue and Fourteenth street.	Grading and Improving streets in Anacostia, 1909.					1,124.56
6005	Vicinity of Plaza.	Elimination of grade crossings.					1,175.06
6006	Property yard, reservation 17, between New Jersey avenue, Virginia avenue, and H street.	do.					2,325.36
6007	North Capitol street, from C to E streets.	do.					899.14
6008	West Virginia avenue, north of Florida avenue.	do.					
6015	First street se., between B and C streets.	Asphalting First street se., between B and C streets.					44.50
6020	Northwest, southeast, and southwest sections.	Elimination of grade crossings.					86.87
6024	Market square reservation, Tenth to Eleventh streets.	Contingent fund, sealer of weights and measures.		600.00	444		253.03
6028	Around Senate Office Building.	Improving Capitol grounds.	3,245.04	574.75			4,129.56
6029	Around House of Representatives Office Building.	do.	2,946.43	550.75			3,671.43
6032	South side Florida avenue ne., between New York avenue and Eckington place.	Elimination of grade crossings.			318		127.75
6039	Massachusetts avenue, from North Capitol street to Plaza.	do.				2,408	4,334.71
6044	First street se., between B and C streets, House of Representatives Office Building.	Improving Capitol grounds.	644.94				661.53

TABLE M.—Miscellaneous items, 1910—Continued.

Job No.	Location.	Appropriation.	Grading. Cu. yds.	Cement sidewalk laid. Sq. yds.	Curb reset. Lin. ft.	Curb set.		Brick sidewalk relaid. Sq. yds.	Granite block relaid. Sq. yds.	Terracotta pipe laid. Lin. ft.	Asphalt block relaid. Sq. yds.	Asphalt block relaid. Sq. yds.	Cost.
						6 by 20 inches.	8 by 8 inches.						
1503	Both sides C street nw., between Tenth and Eleventh streets.	Northwest, schedule			30.00	Lin. ft. 373.44							\$497.36
1504	Florida avenue nw., between Eleventh and Fourteenth streets.	do.						2,237					391.45
1602	Both sides Second street sw., between F and I streets.	Southwest, schedule											2,587.49
1701	Both sides B street se., between Eleventh and Fifteenth streets.	Southeast, schedule				2,011.30							1,493.48
1800	Eighth street ne., from Maryland avenue to H street.	Northeast, schedule				11.67	1,112.47						456.85
6034	New Jersey avenue se., between E street and across Virginia avenue.	Elimination of grade crossings.						3,163	2,419				1,612.27
6040	East approach to T Street Bridge.	do.		50.00	57.50								106.45
6043	F street, between New Jersey avenue and North Capitol street.	do.					1,363.63						1,209.48
6046	Old high railway, Baltimore and Ohio R. R. Co., square 857.	do.											1,709.13
6072	Alleys, square 028.	do.	186									700	1,094.37
6078	Southwest corner Tenth and D streets.	do.											14.25
6079	Retaining wall, Canal road.	Emergency fund											57.65
6081	Track leading to N street trestle.	Elimination of grade crossings.											31.65
6064	E street ne., between Second street and Massachusetts avenue, from Massachusetts avenue ne.,	do.	310										175.57
6065	Plaza eastward.	do.	300										172.00
6066	D street ne., between Delaware avenue and Second street.	do.	1,075										501.62
6067	E street nw., between New Jersey avenue and North Capitol street.	do.	475										220.00
6068	First street ne., between C and D streets.	do.	500										288.50
6073	Plaza, Union Station.	do.											685.18
6082	Delaware avenue ne., between C and D streets.	do.										1,780	2,541.85
	Total.		2,846	7,034.57	140.45	3,683.13	9,533.89	7,435	2,419	210	3,146	1,780	50,933.67

TABLE N.—Whole cost work, 1910.

Job No.	Location.	For whom done.	Grading. <i>Cu. yds.</i>	Cement sidewalk laid. <i>Sq. yds.</i>	Brick sidewalk laid. <i>Sq. yds.</i>	Curb reset. <i>Lin. ft.</i>	Curb set.			Terra cotta pipe. <i>Lin. ft.</i>	Vitrified block road-way. <i>Sq. yds.</i>	Asphalt block road-way. <i>Sq. yds.</i>	Cost.
							8 by 8 inches. <i>Lin. ft.</i>	6 by 20 inches. <i>Lin. ft.</i>	Old. <i>Lin. ft.</i>				
6004	Michigan avenue side square 3500.	Jos. Paul.											\$211.05
6010	First street se., between C and E streets.	Anacostia and Potomac River Ry. Co.							1,035				5,710.28
6013	Dupont Circle, between P street and New Hampshire avenue.	Geo. A. Fuller Co.					121.35						210.10
6016	Fourteenth street, from B street nw. to B street sw.	Washington Railway and Electric Co. and Mount Vernon and Alexandria Ry.											74.10
6028	Around Senate Office Building.	Improving Capitol grounds.											4,129.56
6029	Around House of Representatives Office Building.	do.											3,671.43
6035	No. 3136 Newark street.	R. W. Scott.											35.10
6042	Cedar street, east of Blair road.	John I. Stoddard.				11.60	574.75						42.65
6044	West side First street se., between B and C. House of Representatives Office Building.	Improving Capitol grounds.		3,245.04		15.75	550.75			36	19		661.53
6048	Fuller street, west of Sixteenth street nw.	J. B. Henderson.	70						44			119	343.24
6019	K street se., between Canal and Sixth streets.	Philadelphia, Baltimore and Washington Ry. Co.											5,331.03
6021	Eighth street ne., from L street to Florida avenue.	Capital Traction Co.											294.79
6023	Northeast corner Seventeenth and H streets nw.	Washington Railway and Electric Co.		22				43.11					113.22
6030	South side G street nw., between New Jersey avenue and Massachusetts avenue.	Anacostia and Potomac River Railway Co.											688.34
6045	California street, between Second street east and Plaza.	Capital Traction Co.											201.50
6087	North side of W street nw., between North Capitol and First streets.	Jos. Paul.					90.45						106.48
4008	Connecticut avenue, between Pierce Mill road and Chevy Chase circle.	Capital Traction Co.											1,000.00
4121	Adams Mill road, between Lanier place and Ontario place.	J. L. Warren.											106.00
4211	Eleventh street, Florida avenue to Columbia road.	Washington Railway and Electric Co.											46.58
			70	6,878.41		27.35	1,337.30	43.11	1,079	36	19	119	22,976.98

TABLE O.—*Number of square yards and cost charged for repairs to cuts made by plumbers and others in streets, avenues, and alleys during the fiscal year ended June 30, 1910.*

Item No. 1 shows the number of cuts repaired for various plumbers.  
 Item No. 2 shows the number of cuts repaired and the cost thereof on "whole cost" work, to which 5 per cent is added for tools, clerk hire, etc., for the maintenance of the miscellaneous trust fund deposits, District of Columbia (operating account), which fund is used to pay all accounts for labor, material, tools, etc., used in this class of work, and also includes the work done for gas, electric light, and telephone companies, which work is charged at other than the flat rates charged to plumbers.  
 Item No. 3 shows the number of cuts repaired on account of sewer department, and the cost of same.  
 Item No. 4 shows the number of cuts repaired on account of the water department, and the cost of the same.  
 Item No. 5 shows the number of cuts repaired for work done on account of other appropriations of the District of Columbia and the cost of the same; also the cost of work charged against retents and appropriations of the General Government.

	Number.	Square yards.	Cost (amount charged).
<b>Item No. 1.—Plumbers' cuts:</b>			
Sheet asphalt.....	559	1,201.34	\$3,904.36
Granite block.....	191	791.06	1,186.59
Asphalt block.....	273	1,337.87	2,006.80
Vitrified block or brick.....	262	582.16	1,455.40
Cobble and rubble.....	191	539.12	323.47
Macadam.....	540	2,083.15	2,083.15
Granolithic walks.....	543	803.57	1,808.04
Brick si lewalks.....	854	a 29,172.00	1,458.00
Bricks furnished.....		a 20,217	202.17
Asphalt blocks furnished.....		a 2,917	218.78
Vitrified blocks furnished.....		a 10,372	207.44
Cuts repaired at actual cost plus 5 per cent.....	(b)		407.47
<b>Item No. 2.—Railroad, electric-light company, telephone company, and other corporations and individual depositors, account of whole cost work.....</b>	3,413	7,338.27	15,262.27
<b>Item No. 3.—Various appropriations of the sewer department.....</b>	3,563	48,137.72	92,984.11
<b>Item No. 4.—Various appropriations of the water department.....</b>	548	8,047.11	11,590.30
<b>Item No. 5.—Various appropriations other than the above, including repairs to streets, roads, street lighting, electrical department, improvements and repairs, assessment and permit work, elimination of grade crossings, contingent and miscellaneous expenses, parking commission, etc.....</b>	1,285	12,506.40	12,437.09
	342	3,681.56	7,588.31
	9,151	80,311.06	139,862.08

a Feet, and not included in total number of square yards.

b Included in number of macadam cuts.

TABLE P.—*Grading streets, alleys, and roads, 1910.*

Job No.	Location.	Grading.	Cost.
		<i>Cu. yds.</i>	
1900	Quincy street, between Fourteenth street and Cedar road.....	632	\$152.37
1901	Otis street nw., between Holmead and Fourteenth streets.....	7,500	1,162.87
1902	K street se., between Thirteenth and Fourteenth streets.....	112	60.13
1903	Roadway entrance from Thirty-second street into South street.....	1,339	637.00
1905	Monroe street ne., between Thirteenth and Fifteenth streets.....	7,653	1,645.80
1908	Spring road, from Fourteenth street to Cedar road.....	3,024	584.19
1909	Irving street, between Warder street and Soldiers' Home.....	3,296	770.76
1911	Fulton street ne., east of Twentieth street.....	3,319	676.87
1912	Ninth street nw., northward from Allison street.....	1,652	397.99
1913	Seventeenth street ne., between Brentwood road and Irving street.....	1,061	147.69
1914	Ellicott street nw., between Belt road and Fort Reno reservation.....	1,647	495.18
1915	North Carolina avenue adjacent to No. 8 Engine House.....	1,296	281.26
1916	Kent place ne., between Ninth and Tenth streets.....	2,046	414.50
1923	Harvard street, between Fourteenth and Sixteenth streets.....	964	187.50
1924	First east, south of Q street.....	1,665	410.25
1925	Bancroft place, between Twenty-third and Twenty-fourth streets.....	1,272	188.88
1928	Twenty-seventh street nw., between Woodley road and Garfield street.....	910	212.50
1930	Twelfth street nw., between Clifton and Euclid streets.....	3,530	1,332.49
1931	Twelfth and Thirteenth streets se., between Pennsylvania avenue and I street, and I street se., between Eleventh and Twelfth streets.....	5,464	439.63

TABLE P.—Grading streets, alleys, and roads, 1910—Continued.

Job No.	Location.	Grading.	Cost.
		<i>Cu. yds.</i>	
1933	Carrollburg street.....	965	\$245.81
1934	West side of Twentieth street ne., at Girard street.....	1,440	230.75
1936	Harvard street, just west of Fifth street.....	432	74.25
1937	Central avenue ne., between Myrtle avenue and Brentwood road.....	168	23.75
1939	Rock Creek Church road west of New Hampshire avenue.....	128	275.87
1940	North half of square 931.....	377	50.50
1941	Keefer and Lamont streets, nw.....	1,176	292.05
1942	West side of Sherman avenue, between Harvard street and Columbia road.....	676	101.00
1948	Twenty-eighth street, from Cleveland avenue to south end of tennis courts.....	776	95.00
1929	Fuller street nw., west of Sixteenth street.....	5,492	1,101.00
1935	Various streets, northeast and southeast sections.....	10,482	1,568.18
	Total.....	70,554	14,256.02

## REPORT OF INSPECTOR OF ASPHALT AND CEMENTS.

WASHINGTON, August 16, 1910.

CAPTAIN: I have the honor of submitting the following report showing the operations of this office during the fiscal year ending June 30, 1910, summarized in the following tables:

*Number of samples tested.*

Hydraulic cements:	
Portland, brands 7.....	9,645
Asphalts:	
Asphaltic cements.....	644
Asphaltic surface mixtures.....	287
Asphaltic binder mixtures.....	31
Bermudez.....	48
California.....	14
Cuban.....	3
Trinidad, Lake.....	4
Wyoming.....	1
Binder stone.....	219
Crushed stone.....	58
Limestone dust.....	34
Oil, residuum.....	19
Sands.....	240
Trap rock.....	6
Miscellaneous tests and analyses:	
Block, asphalt.....	17
Brick.....	3
Carbon black.....	1
Coal tar paving pitch.....	3
Hydrolene.....	3
Lead pipe.....	1
Linseed oil.....	1
Pipe covering.....	2
Road oil.....	2
Tarvia.....	1
Thermometers.....	24
Turpentine.....	1
Total.....	11,312

## HYDRAULIC CEMENTS.

*Number of barrels inspected and the average results of tests on same.*

[The 9,645 samples represent 95,405 barrels, of which 2,700 were rejected.]

Brands of Portland cement.	Barrels.	Sam- ples.	Resi- due re- tained on 100- mesh sieve.	Initial set.	Water used.		Tem- per- ature of air and water.	Tensile strength per square inch.			Spec- ific grav- ity.
					Neat ce- ment.	Three parts stand- ard quartz.		Neat cement.		Seven days, three parts stand- ard quartz.	
								One day.	Seven days.		
			<i>P. ct.</i>	<i>H. m.</i>	<i>P. ct.</i>	<i>Per ct.</i>	<i>° F.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	
Atlas.....	178	43	6.0	2 30	19.0	9.5	72	445	779	695	3.138
Dragon.....	34,700	3,470	6.0	2 00	19.6	9.5	76	589	804	344	3.121
Dragon <i>a</i> .....		25	6.2	3 20	20.0	9.5	78	614	732	340	3.101
Giant <i>a</i> .....		25	7.2	5 50	20.0	9.5	76	364	660	272	3.162
Lehigh <i>a</i> .....		25	7.5	4 50	20.0	9.5	78	377	754	328	3.187
Nazareth.....	7,200	720	3.9	2 20	19.1	9.5	79	451	804	356	3.159
Old Dominion.....	53,157	5,320	4.9	2 00	19.5	9.5	76	489	789	342	3.117
Security.....	170	17	5.2	2 00	19.0	9.5	78	465	845	283	3.142

<sup>a</sup> Samples submitted with bids for furnishing cement to the District government.

*Barrels of cement tested during the year.*

District of Columbia.....	49,885
Cranford Paving Company.....	28,750
Brennan Construction Company.....	7,200
Use in Piney Branch Bridge (Cranford Paving Company).....	6,400
Colburn Brothers.....	1,950
Lake Stone Company.....	1,220
Total.....	95,405

The above referred to cement was used by day laboring forces employed by the District and by contractors doing work for the District.

## BINDER STONE.

During the year there were examined 219 samples of binder stone used by contractors in the laying of asphalt streets, representing 12,480 cubic yards, of which 140 cubic yards were rejected on account of inferior quality, softness of stone, and excess of dirt.

	Samples received.		Samples rejected.	
	Number.	Cubic yards.	Number.	Cubic yards.
Brennan Construction Co.....	178	10,680		
Cranford Paving Co.....	41	1,800	2	140

## LIMESTONE DUST.

This material is used as a filler to reduce the percentage of voids in the sand used in the asphalt topping mixture.

There were examined 25 samples, all of which passed the required degree of fineness (all to pass 30 and not less than 85 per cent to pass 100-mesh sieve).

	Samples.	Tons.
Brennan Construction Co.....	22	550
Cranford Paving Co.....	3	80

## INSPECTION OF SAND USED IN SURFACE MIXTURES.

For the Brennan Construction Company: Inspected 192 scows, equaling 11,910 cubic yards, of which there were rejected 670 cubic yards, or 5.62 per cent.

For the Cranford Paving Company: Inspected 29 scows, equaling 4,350 cubic yards, of which there were rejected 1,200 cubic yards, or 27.6 per cent.

## PETROLEUM RESIDUUM.

All residuum used during the year by the contractors in the preparation of asphalt cements was the product of the Standard Oil Company and was found to be of good quality. A total of 19 samples was submitted by the contractors for test and examination, which showed the following:

	Samples.			Pounds.		
Brennan Construction Co.....	15			735,000		
Cranford Paving Co.....	2			105,464		
Washington Asphalt Block and Tile Co.....	2			20,200		

	Specific gravity.			Gravity, Baumé.			Flashed.		
	High-est.	Low-est.	Aver-age.	High-est.	Low-est.	Aver-age.	High-est.	Low-est.	Aver-age.
Brennan Construction Co....	0.9396	0.9290	0.9343	20.7	19.1	19.8	° F. 405	° F. 365	° F. 390
Cranford Paving Co.....	.9333	.9296	.9314	20.6	20.0	20.3	405	385	395
Washington Asphalt Block and Tile Co.....	.9539	.9539	.9539	16.7	16.7	16.7	333	315	325

	Burned.			Loss, at 400° F., 30 hours.		
	High-est.	Low-est.	Aver-age.	High-est.	Low-est.	Aver-age.
Brennan Construction Co.....	° F. 490	° F. 455	° F. 472	Per ct. 5.8	Per ct. 1.2	Per ct. 2.9
Cranford Paving Co.....	480	470	475	5.2	2.4	3.8
Washington Asphalt Block and Tile Co.....	545	520	532	4.2	3.4	3.8

## ASPHALTS.

Samples submitted of asphalt to be used in the laying of pavements for the District by contractors, showed the following percentage of bitumen soluble in carbon bisulphide:

*Brennan Construction Company.*

Per cent.

33 samples Bermudez, refined, representing 4,135 tons..... 95.47

*Cranford Paving Company.*

15 samples Bermudez, refined, representing 375 tons..... 95.06  
 11 samples California, grade "D," representing 275 tons..... 99.48  
 1 sample Trinidad Lake, representing 25 tons..... 56.21

*Washington Asphalt Block and Tile Company.*

3 samples Trinidad Lake, crude, representing 1,600 tons.....<sup>a</sup>51.83

<sup>a</sup> After refining.

## ASPHALT CEMENTS.

Table showing penetration results of asphalt binder and topping used by the paving companies during the year 1910.

	Asphalt binder cement.							Asphalt topping cement.							
	Samples.	Penetration at 77° F.						Samples.	Penetration at 77° F.						
		High-est.		Low-est.		Aver-age.			High-est.		Low-est.		Aver-age.		
		Office test.	Yard test.	Office test.	Yard test.	Office test.	Yard test.		Office test.	Yard test.	Office test.	Yard test.	Office test.	Yard test.	
Brennan Construction Co.:															
Bermudez.....	221	76	75	49	50	67	68	223	62	61	46	50	56	57	
California grade "D".....	25	72	70	56	59	64	65	19	56	57	46	49	52	52	
Cranford Paving Co.:															
Bermudez.....	22	73	75	60	62	67	69	24	62	62	46	50	57	60	
California grade "D".....	17	67	72	51	62	62	68	16	58	62	45	50	52	57	
Asphalt macadam (Bermudez) <sup>a</sup> .....	14	61	61	49	50	56	58	.....	.....	.....	.....	.....	.....	.....	
Washington Asphalt Block and Tile Co.:															
Trinidad Lake.....								90	23	23	18	18	19	20	

<sup>a</sup>Also included in the number of samples of Bermudez binder cement for Brennan Construction Company.

## BINDER MIXTURE.

During the year 31 samples were submitted for examination and analyses. The following tables show the average per cent bitumen contained and the mesh composition of the mineral aggregate:

	Samples.	Bitumen soluble in carbon bisulphide.
		<i>Per cent.</i>
Brennan Construction Co. (Bermudez).....	24	3.7
Brennan Construction Co. (California Maltha).....	5	3.7
Cranford Paving Co. (Bermudez).....	2	3.4

## Mineral aggregate, mesh composition.

	Highest.	Lowest.	Average.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Retained on 1-inch mesh sieve.....	2.90	2.45	2.67
Retained on 3-inch mesh sieve.....	23.60	19.46	21.53
Retained on 5-inch mesh sieve.....	38.71	32.20	35.45
Retained on 1-inch mesh sieve.....	29.39	29.30	29.34
Retained on 8-inch mesh sieve.....	9.90	7.85	8.88
Passing 8-inch mesh sieve.....	2.12	2.00	2.06

## ASPHALT SURFACE MIXTURES.

During the year 287 samples were submitted for examination and analyzed. The following tables show the maximum, minimum, and average per cent bitumen contained and the average mesh composition of sand used in the surface mixtures:

	Samples.		Highest per cent of bitumen.		Lowest per cent of bitumen.		Average per cent of bitumen.	
	Bermudez.	California "D."	Bermudez.	California "D."	Bermudez.	California "D."	Bermudez.	California "D."
Brennan Construction Co.....	228	20	12.1	11.1	9.8	9.4	10.7	10.6
Cranford Paving Co.....	23	16	11.5	11.4	9.9	10.2	10.8	10.9



*Mesh composition of sand.*

	Brennan Construction Co.	Cranford Paving Co.
Per cent retained on sieves having—		
20 meshes per linear inch.....	3.7	3.0
40 meshes per linear inch.....	21.6	20.0
60 meshes per linear inch.....	25.8	21.9
80 meshes per linear inch.....	22.6	23.5
100 meshes per linear inch.....	7.9	8.9
Passing 100 meshes per linear inch.....	18.1	22.5

## ASPHALT BLOCK.

During the year there were manufactured for the District government by the Washington Asphalt Block and Tile Company, of this city, about 1,357,722 paving blocks. These were used in paving various streets, avenues, and alleys; approaches to and the Plaza of the Union Station. These blocks were manufactured of Trinidad Lake asphalt fluxed with petroleum residuum and a mineral aggregate composed of Potomac granite and limestone. Following is a table showing average results of tests of materials used in their manufacture:

*Average results of tests of asphalt cement and mineral aggregate used in the manufacture of asphalt blocks.*

	As originally used in mixture.	Reduced to 50 per cent purity by addition of limestone dust for laboratory test.
Bitumen soluble in carbon bisulphide.....per cent..	64.11	49.59
Penetration:		
At 77° F., 100 grams, 5 seconds.....	19	15
At 115° F., 50 grams, 5 seconds.....	96	69
Per cent of hardening after heating at 300° F. for 18 hours.....	.408	.....
Per cent of loss after heating at 300° F. for 18 hours.....	.68	.41
Brittleness in centimeters, drop of 25 grams weight, at 32° F.....	23	22

*Asphalt block mixture.*

Specific gravity.....	2.378
Bitumen soluble in carbon bisulphide.....	7.57
Mesh composition of mineral aggregate:	
Retained on $\frac{1}{4}$ -inch mesh sieve.....	1.7
Retained on 20-mesh sieve.....	56.6
Retained on 100-mesh sieve.....	19.6
Passing 100-mesh sieve.....	22.1

## ASPHALT MACADAM.

During the year there were laid by the Cranford Paving Company, under contract, about 12,780 square yards of asphalt macadam—11,000 yards on Thirteenth street NW., between Euclid street and Park road, and 1,780 yards on the east side of Fourteenth street NW., between Florida avenue and Clifton street.

The roadbed of Thirteenth street was prepared by the District and consisted of a first layer of trap rock ranging in size from  $2\frac{1}{4}$  inches to dust laid to a thickness of 5 inches and rolled with a 10-ton steam roller until thoroughly compact. Upon this roadbed hot asphalt (Bermudez) macadam mixture was spread. This mixture consisted of 2 parts trap rock crushed to a size from 1 inch to dust and 1 part sand, to which was added about 1 per cent limestone dust. The crushed stone and sand were heated to a temperature of about 250° F., the limestone dust being added in a cool state to the hot mixture, conveyed to an asphalt mixer, and thoroughly mixed.

Hot asphalt cement was then added and the whole thoroughly mixed for a period of about five minutes; it was then hauled to the site of the work, spread over the

roadbed to a thickness of 3 inches, then rolled with 5 and 10 ton steam rollers until thoroughly compact. Over this surface was then spread a thin coating of hot asphaltic cement for the purpose of filling voids. A thin coating of trap-rock screenings three-eighths inch to dust was then spread on the surface as a top and final coating and rolled with a 10-ton steam roller.

On Fourteenth street a hydraulic cement concrete base was laid 6 inches in thickness, upon which the asphalt macadam was placed and treated in the same manner as that laid on Thirteenth street.

These two streets were laid for experimental purposes, and their present condition indicates they will prove satisfactory.

Following is a table showing average results of laboratory tests of asphaltic cement and the mineral aggregate used in the preparation of the asphalt macadam with which the above-named streets were paved:

Asphalt cement (Bermudez) soluble in carbon bisulphide.....	per cent..	98
Penetration:		
At 32° F., 200 grams, 5 seconds.....		8
At 77° F., 100 grams, 5 seconds.....		59
At 115° F., 50 grams, 5 seconds.....		210
Ductility at 77° F. (length of stretch in centimeters at the rate of 5 centimeters per minute).....		30
Brittleness at 32° F. (in centimeters, drop of 25 grams weight).....		17
Loss by volatilization, at 300° F., 18 hours.....	per cent..	2.6
Per cent hardening after heating 18 hours at 300° F.....	do.....	50.3
Action of water on cement, 7-day immersion.....		None.

*Macadam mixture.*

	Per cent.
Bitumen soluble in carbon bisulphide (not including flush coat).....	7.1

*Mineral aggregate, mesh composition.*

Retained on—	Per cent.
1-inch mesh sieve.....	1.0
¾-inch mesh sieve.....	13.0
½-inch mesh sieve.....	30.2
¼-inch mesh sieve.....	19.2
8-mesh sieve.....	2.6
10-mesh sieve.....	.3
20-mesh sieve.....	1.3
40-mesh sieve.....	10.7
60-mesh sieve.....	10.7
80-mesh sieve.....	6.2
100-mesh sieve.....	1.6
Passing 100-mesh sieve.....	3.2
Specific gravity of stone.....	2.851
Specific gravity of sand.....	2.690
Voids in aggregate.....	per cent.. 26.4

MISCELLANEOUS.

During the year tests and analyses of various materials, as shown by the first table of this report, were made by request from various departments of the District, and results thereof reported to such departments.

Very respectfully,

J. O. HARGROVE,  
*Inspector of Asphalt and Cements.*

Capt. MARK BROOKE,  
*Corps of Engineers, U. S. Army,*  
*Assistant to Engineer Commissioner, District of Columbia.*

## REPORT OF THE SURVEYOR, DISTRICT OF COLUMBIA.

WASHINGTON, *August 25, 1910.*

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year ended June 30, 1910:

The amount of work for the fiscal year ended June 30, 1909, greatly exceeded that of any previous year, and it was thought that it would not be exceeded in volume for many years to come, but the amount of work for the past year has exceeded that of the previous year in all branches of the work, making this indeed a record for the surveyor's office.

The receipts for the past year for work done for private parties amounted to \$22,891.80, against \$20,544.76 for the previous year. This is an increase of \$2,347.04. This increase in the volume of work and receipts is due to the increased activity in building operations, and in the development of suburban property into lots and blocks.

The total number of orders received for all classes of work for private parties during the year was 4,533, against 4,070 for the previous year. This is a substantial increase.

The number of lots surveyed in the city and county for the past year was 2,854, against 2,277 for the previous year. This does not include surveys for the purpose of subdividing large tracts or surveys for the District of Columbia.

The examination of walls of new buildings in the course of erection to determine their correct location were 2,422, against 1,948 for the previous year. This shows an increase of 474 new buildings examined. This class of work requires prompt and efficient service, as the building regulations require the work to be stopped if the walls are not certified to by this office, and if this service is not rendered immediately workmen and mechanics are temporarily thrown out of their employment.

Plats made, as required under the regulations, for the erection of theaters, stables, motors, etc., were 122, which was practically a new item during the past year. This class of work also requires immediate attention.

It will therefore be seen that the last two classes of work mentioned have entailed a great increase of "rush" work for the office.

There has been a slight increase in the number and amount of work in surveying, subdividing, and recording large agricultural tracts into alleys, streets, lots, and blocks. The number of new lots created under this head was 7,706, against 5,958 for the previous year. This will indicate that the area subdivided was much larger than for any previous year. An item of interest is the fact that about 115,500 linear feet, or 22 miles, of street were created in connection with these subdivisions, and condemnations and dedications.

I wish to invite your attention to my annual estimates in which I have asked for a small increase, believing that the office is entitled to the same in view of our increased amount of work.

The following table is submitted as a matter of comparison and convenience, and will show a decided increase in all branches of work:

	Fiscal year.		
	1907-8.	1908-9.	1909-10.
FOR PRIVATE PARTIES.			
Individual lots or parts of lots surveyed in city and county.....	1,461	2,277	2,854
Certificates of survey issued covering one or more lots.....	824	1,130	1,290
Duplicates of above recorded in survey certificate books.....	824	1,130	1,290
Separate surveys made to verify walls.....	560	818	954
Individual buildings inspected as to location of new walls.....	1,229	1,948	2,422
Walls moved before final certification.....	374	478	490
Large tracts in county surveyed, subdivided, and recorded.....	17	24	25
Outline surveys in county of unsubdivided tracts.....	57	92	98
Subdivision blanks prepared.....	433	598	627
Duplicate subdivision blanks prepared for assessor.....	433	598	627
Subdivisions recorded.....	391	583	561
Total of individual new lots in subdivisions.....	5,219	5,958	7,706
Plats of one or more recorded lots to accompany applications for building permits (commonly called building plats).....	883	1,305	1,400
Plats made under regulations for theaters, stables, motors, etc.....			122
Indorsements on survey plats.....	824	1,130	1,290
Indorsements on wall survey plats.....	560	818	954
Estimates of cost issued in triplicate.....	2,801	4,070	4,533
Plats made up on order of private parties.....	2,647	3,747	4,189
Total of fees paid to collector of taxes by private parties.....	\$13,040.80	\$20,544.76	\$22,891.80

	Fiscal year.		
	1907-8.	1908-9.	1909-10.
FOR THE DISTRICT OF COLUMBIA.			
Surveys for the District of Columbia.....	43	110	92
Plats recorded (condemnations, dedications, etc.).....	56	30	84
Postal card reports concerning walls to owners.....	560	818	954
Reports concerning walls to building inspector.....	733	895	995
Assessment and taxation plats recorded.....	252	252	327
MISCELLANEOUS.			
Total of surveys for the District of Columbia and private parties.....	1,501	2,174	2,450
Total of plats, public and private, including plats drawn in books.....	4,313	6,054	6,733

## STREET EXTENSION.

I respectfully transmit herewith report of the assistant surveyor, who has had immediate supervision of the work in connection with street extensions, which office was put under the supervision of the surveyor May 25, 1910.

It is hoped and believed that the abolishment of the street extension office, placing the same under the supervision of the surveyor, will prove satisfactory.

The report will show that during the past year 50 reports and maps were sent to Congress, and that 26 condemnation cases were prepared by this office for the extension and widening of streets and opening and extending of alleys.

The report will show what action has been taken on the various condemnation cases.

## SURVEYS FOR PENAL INSTITUTES.

This office was called upon to make surveys at Occoquan, Va., for the workhouse, and at Accotink, Va., for the reformatory.

The first included an area of 1,154.70 acres, made up of a number of original tracts. The last named included an area of 1,500 acres.

In addition to these surveys a topographical survey was made of a large part of the Occoquan tract.

The field work on these two surveys was in charge of Mr. J. B. Shinn, assistant surveyor. The results of the same have been embodied in a special report to the commissioners, the original maps being recorded among the files of this office.

## PENDING LEGISLATION.

I wish to urge action on House bill No. 16330, which will authorize the surveyor to designate old subdivisions which are now known by local names, such as Meridian Hill, Mount Pleasant, Takoma Park, etc., by the new square numbers. Each year more confusion and complication arises owing to the different designations used by the tax office and the surveyor's office. It is extremely desirable that this bill become a law, so that deeds, transfers, loans, surveys, subdivisions, etc., can refer to the new designations instead of the old ones, which are becoming more and more obsolete and difficult to identify. It is believed that House bill No. 16330 is more desirable than Senate bill No. 4629, each having passed its respective body.

Public act No. 112, approved March 30, 1910, providing for the condemnation of streets, or parts of streets, through the limits of a portion of property reserved from subdivisions, did not pass as originally recommended by the commissioners, and is believed to be of little value. There is nothing to prevent owners from transferring to a third party any part of their property through which they do not wish to dedicate streets, thereby defeating the purpose of the law. But the bill as originally recommended would allow the commissioners to condemn through adjacent property, thereby defeating any attempts on the part of the property owners to evade the law. It is believed that this is of sufficient importance to have this act amended, as improvements are being constructed in the line of proposed streets, interfering seriously with the execution of the highway plan, and rendering condemnation for the extension of streets under that plan more and more expensive each year.

## NEW LEGISLATION.

It would seem desirable to have legislation authorizing the construction of a park system throughout the District.

This is a matter of great importance to every citizen of the District, and a question involving the expenditure of a large amount of money. Subdivisions are being constantly made, and streets are condemned and opened through tracts of land desirable for parks. This should not be so. Authority was given during the last session of Congress for the purchase of two large tracts of land in the northwest section for park purposes—one at Meridian Hill, fronting on Sixteenth street, of about 10 acres, and the other of about 16 acres on Georgetown Heights.

There is much necessity for a bill similar to the one that was introduced during the past session of Congress authorizing the appointment of a park commission, so that there may be a systematic and uniform arrangement of parks throughout the District, rather than a disconnected system as is now being followed.

A bill will be prepared ready for submission to Congress authorizing the condemnation of all of the streets in Barry Farm Subdivision. These streets as now recorded are owned by the property owners. The District has declined to make any improvements in the way of sewer and water in this subdivision. This creates a very unsanitary condition, and is a menace to the health of the residents of this section. This condition is growing worse as the population increases.

It is believed that the condemnation of these streets will be no hardship on the property owners, as the land taken will only be that which is used by the public and upon which the owners pay taxes.

During the last session of Congress authority was given under public act No. 170, approved May 10, 1910, authorizing the Commissioners to condemn and acquire fee simple and absolute title, including all riparian rights, to a strip of land for a public highway and for park purposes along the Anacostia River from Monroe street to Giesboro Point.

There would seem to be no more important legislation than providing for the continuation of this road on each side of the Anacostia River from the northerly city limits on the west and Monroe street on the east to the District line.

Mr. Hugh T. Taggart, special counsel on the ownership and riparian rights along the Anacostia River, in his report to the Commissioners, holds that the United States owns to the high-water line along the shore of the Anacostia River. It is therefore very important that these lines be accurately determined by an official survey, showing by actual courses and distances the meandering of the high-water line, and the location of the original shore line wherever the same can be authentically determined by old landmarks.

This high-water line is receding rapidly. Where it was once water it is now left dry, and should, under Mr. Taggart's opinion, belong to the United States, but as filling and accretion is going on along the bank of this stream very rapidly, thereby shifting the water line and obliterating the original shore line, allowing owners of adjacent property to include new areas in their holdings, I believe that the necessity of the case is so urgent that an immediate appropriation of \$5,000 for a survey to determine this line should be asked for. We would then have a record of the boundary line between the Government and private ownership, which might prevent expensive law suits and much delay in the future development of the park system along the Eastern Branch, which must be developed at no distant date.

In connection with the importance of this matter, reference has only to be made to the famous case of *Morris v. The United States*, known as the Potomac Flats case, in which a great amount of money and labor were spent in litigation, much of which was in determining the boundary line between the Government and private owners along the Potomac Park water front.

Under the head of new legislation is is thought advisable to call your attention to the necessity of some legislation whereby parties making large subdivisions of agricultural ground into lots and blocks will be required to furnish and record, in connection with the recording of the subdivision, a certificate of title of the property subdivided.

This would be something of a new departure, but it is believed that it is of vital importance to the purchasers of suburban property for homes. Under the present arrangement it is necessary to spend days in search of records, going into the colonial times to settle the ownership of a small lot, the examination of the title being quite expensive. The necessity of this examination should not go beyond the date of record of the original subdivision. In years to come it will be very difficult to determine what original tracts the various lots are made from, especially where a single lot may

be carved out of several original tracts. These original lines are becoming more and more difficult to reestablish, as improvements are made obliterating every original mark. If the title were good at the time of the recording of the subdivision, it would be unnecessary ever to go back and examine the title of these original tracts.

It seems that there should be no difference in an original subdivision being made to-day in the county than in the original subdivision of the federal city, titles to lots in the same going back to the foundation of the city.

To accomplish this it will be necessary to have legislation authorizing the surveyor to require it. This might be done in three ways:

First, the employment of a special attorney attached to the surveyor's office, who would be required to give bond, whose duty it would be to examine the title of property submitted for subdivision.

Second, by taking bids from reputable title companies for guaranty of title for the property to be subdivided.

Third, by requiring the applicant for the subdivision to submit at his own expense an abstract of title from a title company or lawyer satisfactory to the surveyor. The abstract of title would be copied on the records and the original filed in the surveyor's office.

Any one of these methods would not necessarily entail an additional expense to the District, as the cost to the District in the first two cases could be included in the estimate for the subdivision.

It is recommended that this matter be given careful consideration before acted upon, as this is a considerable change from the present method.

My acknowledgments are due to the men of this office for the great amount of work accomplished during the past year. They have given close application to their work, and have at all times been efficient and loyal in the performance of their duties.

Very respectfully,

MELVIN C. HAZEN,  
*Surveyor, District of Columbia.*

Capt. MARK BROOKE,  
*Corps of Engineers, U. S. Army,  
Assistant to the Engineer Commissioner, D. C.*

#### STREET EXTENSION DIVISION.

SURVEYOR'S OFFICE, DISTRICT OF COLUMBIA,  
*Washington, August 18, 1910.*

SIR: I have the honor to submit herewith report of the operation of the Street Extension Division for the fiscal year ended June 30, 1910.

From July 1, 1909, to April 1, 1910, the office was under the direction of E. M. Talcott, assistant engineer, and from April 1, 1910, to May 25, 1910, under the direction of T. C. J. Baily, assistant engineer, on which latter date the office was combined with the surveyor's office, under the supervision of the surveyor, with the assistant surveyor in particular charge of street extension matters.

Reports and maps were sent to Congress on the following bills:

Extension of Albemarle street NW. from Wisconsin avenue to Thirty-ninth street.

Widening of Benning road from Fifteenth street NE. to Oklahoma avenue.

Extension of Columbia road NW. through square 3051.

Approaches to Connecticut Avenue Bridge.

Extension of First street NE. from Florida avenue to T street.

Extension of Franklin street NE. from Twenty-fourth street to Bladensburg road.

Extension of Iowa avenue and Farragut street NW. from Fourteenth to Sixteenth streets.

Extension of Keating avenue and Prospect avenue to Second street NE.

Extension of Massachusetts avenue NW. from Wisconsin avenue to District line.

Extension of Military road to Georgia avenue.

Extension of Newton place NW. east and west of Georgia avenue.

Extension of Park place NW. from Otis place south.

Extension of Seventeenth street NW. from Florida avenue to Crescent place.

Extension of Seventeenth and Kenyon streets NW.

Addition to Rock Creek Park west of Sixteenth street.

Opening a road along Anacostia River.

Extension of Twenty-third and R streets SE.

Widening Sixteenth street at Piney Branch Bridge.

Opening Montrose Park west of Oak Hill Cemetery.

Extension of Harvard street NW. east of Fifth street.

Extension of Forty-first street from Harrison street to Keokuk street NW.

Closing of Forty-first street between Warren and Yuma streets NW.

Change of highway plan between Georgia avenue and Sixteenth street and Butter-nut and Kalmia streets.

Abandonment of Jefferson street between Fourteenth street and Colorado avenue NW.

Extension of Twentieth and Jackson streets NE.

Widening of First street NE. from H street northward.

Opening a park at Pennsylvania avenue and Branch avenue SE.

Change of highway plans between Broad Branch road, Rock Creek Park, North-ampton street, and Nebraska avenue.

Extension of Nineteenth street NW. from Belmont road to Biltmore street.

Change of highway plan between Connecticut avenue, Rock Creek Park, Klinge-rod, and Ellicott street NW.

Extension of Ontario place from Adams Mill road to Calvert street NW.

Extension of Barry place from Georgia avenue to McMillan Park NW.

Opening a park, square 4213 NE.

Extension of New Hampshire avenue from Petworth to District of Columbia line.

Extension of Princeton place from Georgia avenue to Rock Creek Church road.

Extension of Van Buren street from Piney Branch road to Third street NW.

Extension of Underwood street from Piney Branch road to Third street NW.

Widening of Park road at Mount Pleasant street NW.

Purchase of Graceland Cemetery.

Change of highway plans at Broad Branch road.

Extension of Thirteenth street north of Madison street to Piney Branch road NW.

Extension of Seventeenth street NE. between Brentwood road and Rhode Island avenue.

Extension of Seventeenth street NE. from Bryant street to Rhode Island avenue.

Opening a park, square west of square 2675 NW.

Opening a park, squares 2570, 2573, 2574 NW.

Opening a park, squares south of 1015 and north of 1017 NW.

Extension of Reno road from Fessenden street to Chesapeake street NW.

Widening of Connecticut avenue from Cathedral avenue to Chevy Chase Circle NW.

Widening of Western avenue from Massachusetts avenue to Chevy Chase Circle NW.

Extension of Third street from Shepherd road to Aspen street NW.

In addition to the above, there have been prepared reports and maps on various projects which never matured into bills, and numerous plats for the dedication of streets and alleys.

Submitted herewith is table showing action taken on all condemnation cases filed during the year, and action taken on case previously filed, where such cases were not finally disposed of prior to July 1, 1909. The preparation of these condemnation cases requires not only plats of the property to be taken, but description of each parcel taken, together with owner's name, and finally, when verdict of jury is filed, description and owner's name of every parcel assessed for benefits.

Respectfully,

J. B. SHINN,

*Assistant Surveyor, District of Columbia.*

The SURVEYOR DISTRICT OF COLUMBIA.

## Condemnation cases.

## STREET EXTENSIONS.

Subject.	Court docket No.	Act No.	Act approved.	Case filed.	Verdict filed.	Verdict.		Action on verdict.
						Damages.	Benefits.	
Girard street nw., west to Fifteenth street.	812	279	Feb. 26, 1909	Apr. 9, 1909	July 21, 1909			Decree setting aside verdict and award of jury, Dec. 14, 1909.
Twentieth street, widening at Park road.	813	264	Feb. 25, 1909	.....do.....	June 30, 1909	\$2,428.00	\$2,800.14	Confirmed June 24, 1910.
New York avenue, Fourth street to Bladensburg road.	819	211	Feb. 6, 1909	May 3, 1909	June 18, 1910			Not yet confirmed.
Rittenhouse street nw., east to Daniel road.	820	272	Feb. 25, 1909	May 14, 1909	Jan. 7, 1910	7,134.04	7,573.00	Confirmed Feb. 10, 1910.
Massachusetts avenue so., to Bowen road.	821	268	.....do.....	May 18, 1909				Not rendered.
Ninth street nw., Barry place to Euclid street.	822	278	Feb. 26, 1909	May 20, 1909	Jan. 13, 1910	9,254.61	9,623.29	Confirmed Feb. 10, 1910.
Minnesota avenue, Pennsylvania avenue to Sherif road.	823	267	Feb. 25, 1909	May 22, 1909				Case continued to Oct. 7, 1910.
Road along Anacostia River.	824	336	Mar. 4, 1909	May 29, 1909	Apr. 29, 1910	14,015.80	7,554.57	Confirmed May 31, 1910.
Albemarle street nw., Wisconsin avenue to Murdock Mill road.	733	190	Mar. 2, 1907	May 7, 1907	June 25, 1909	5,000.00	5,400.00	Confirmed Dec. 23, 1909.
Widening Thirteenth street nw., between Park road and Monroe street.	853	303	.....	Nov. 3, 1909	Feb. 10, 1910	2,458.50	2,752.44	Confirmed Mar. 24, 1910.
Building line, Irving street between Fourteenth and Sixteenth streets.	870	.....	.....	Apr. 21, 1910	.....	.....	.....	Case discontinued May 19, 1910.
Extension Forty-first street nw.	872	93	Mar. 23, 1910	Apr. 29, 1910	July 1, 1910	.....	.....	Not yet confirmed.
Extension of Park place nw.	874	55	Feb. 21, 1910	May 12, 1910	.....	.....	.....	Continued to Oct. 7, 1910.
Extension of Franklin street ne.	877	56	.....do.....	May 23, 1910	.....	.....	.....	Continued to July 1, 1910.
Extension of Newton place.	878	57	.....do.....	.....do.....	.....	.....	.....	Continued to July 15, 1910.
Building line on Thirteenth street between Park and Monroe streets.	880	.....	.....	June 13, 1910	.....	.....	.....	Continued to Oct. 7, 1910.

## ALLEYS.

Square 2854.	793	.....	.....	Nov. 10, 1908	June 23, 1909	\$402.20	\$830.62	Confirmed Aug. 5, 1909.
Square 2834.	809	.....	.....	Mar. 30, 1909	Oct. 27, 1909	2,170.30	2,483.62	Confirmed Dec. 7, 1909.
Square 2580.	810	.....	.....	.....do.....	June 24, 1909	2,209.35	2,450.72	Confirmed Dec. 17, 1909.
Square 32.	817	.....	.....	Apr. 30, 1909	Nov. 22, 1909	2,785.90	3,035.12	Not rendered.
Square 1035.	832	.....	.....	June 21, 1910	.....	.....	.....	Confirmed Jan. 10, 1910.
Square 2615.	861	.....	.....	Jan. 28, 1910	June 4, 1910	5,390.75	5,633.00	Case discontinued Mar. 22, 1910.
Square 2862.	867	.....	.....	Mar. 22, 1910	.....	882.00	1,034.30	Confirmed July 13, 1910.
Square 2581.	868	.....	.....	.....do.....	.....	.....	.....	Do.
Square 2583.	879	.....	.....	June 10, 1910	.....	.....	.....	Not rendered.
Square 2615.	866	.....	.....	Mar. 22, 1910	.....	.....	.....	Do.



## REPORT OF SUPERINTENDENT OF TREES AND PARKINGS.

WASHINGTON, *September 1, 1910.*

SIR: I have the honor to submit herewith my twenty-fifth annual report covering the operations of the office of trees and parkings during the fiscal year ended June 30, 1910.

A total of 4,030 young trees were planted on the streets of the District during the year. This record exceeds that of any year since 1885, and by comparison with the fiscal year 1909 shows an increase of 30. The kinds and numbers planted are as follows:

FALL.		SPRING.	
Ash.....	1	Elm.....	173
Elm.....	464	Gingko.....	118
Gingko.....	17	Linden.....	44
Linden.....	43	Maple:	
Maple:		Colchicum.....	3
Norway.....	1,000	Norway.....	713
Sugar.....	152	Sugar.....	117
Oak:		Oak:	
Pin.....	219	Pin.....	255
Red.....	19	Pyramidal.....	4
Sycamore.....	198	Red.....	99
Tulip.....	1	Sycamore.....	390
Total.....	2,114	Total.....	1,916

All of the above work was curb-tree planting with the exception of 5 planted in the parking on Quincy street NE., between Twelfth and Thirteenth streets, the same being Norway maples.

Perhaps the most notable of the works completed during the past year, which will give visitors from distant cities a pleasing first impression of the capital city was the final planting of trees around the Plaza at Union Station and the improvement of the islands in this broad expanse of pavement. A total of 32 pin-oak trees have been set in the continuous space at the outer edge, and the islands, heretofore filled with broken stone, have had this material removed, substituted by rich earth, and grass seed sown. The turf on these is now very thick and of a rich green color, which lends a charming aspect to an otherwise desert-like space. In fact, it may be said that these patches of green appear as veritable "oases" in a desert. As a fitting border to the Plaza, the continuous space at its outer edge has also been sown in grass, and notwithstanding the difficulties experienced in maintaining sod under most shade trees, the pin oaks being deep rooted and their shade less dense than other varieties, it is found practicable to maintain fairly good grass beneath them. For these reasons and the further fact that both the grass and trees were started at the same time, I look for especially good results here. In addition to the work on the Plaza proper, the following streets approaching the same within the area bounded by New Jersey avenue NW., Second street NE., and C and G streets have been planted with 353 trees, of which 70 are gingkos, 190 pin oaks, 44 Norway maples, 13 elms, and 36 red oaks. The varieties used have been selected after careful thought, due regard being given to the width of the various streets and the character of the trees planted on their continuing portions outside of the area named.

Another feature in connection with the planting work was the setting out of 223 young pin and red oaks on Pennsylvania avenue SE., between Second and Sixth and Tenth and Seventeenth streets, to replace 237 old trees of various kinds, removed. The latter consisted principally of silver maples, a kind whose use has been discontinued, and by disregarding the many protests registered when they were removed the future good appearance of this avenue is now assured. It is proposed to remove more old trees from this avenue during the current fiscal year. Already there are in the central parking a magnificent double row of pin and red oaks planted by this department nineteen years ago, whose remarkable development in this period has been a subject of interest to students of street forestry. Another fine example of oaks is found on Twelfth street west between North and South B streets, where red oaks are planted, the same forming a beautiful vista through the Mall. Particularly is this noticeable in the fall when the foliage has changed to a bright scarlet color.

During the month of April, 1910, a total of 6,768 seedlings were planted in nursery rows from the seed beds. This is their final location prior to planting on the streets, and it therefore represents that many seedlings which will be available for street

planting within three years. The following statement shows the kinds and numbers planted, together with the amount of work done in each nursery:

	Pin oaks.	Sugar maples.	Sycamores.
Georgia avenue nursery.....	2,234	600	70
E street nursery.....	1,348	.....	2,516
Total.....	3,582	600	2,586

This office has repeatedly urged in the past the purchase of ground for a permanent nursery. In previous reports the point has been made that the two sites now in use—one at Georgia avenue and Upshur street NW., and the other in the Washington Asylum grounds—were never intended for nursery purposes. The institutions from which they were temporarily transferred have been urging that they be no longer deprived of this ground, and under the circumstances it is of vital importance that other ground be provided, as the maintenance of a city nursery is essential to proper development of any street tree system. The loss of the Georgia avenue nursery would seem a matter of but a few years, and to reduce this office to the use of the one small tract on E street SE. would seriously cripple the service. It may be possible to obtain sufficient ground adjacent to our southeast nursery by securing a portion of the workhouse site when that institution is moved to its permanent home on the Potomac River, but unless this or some other adequate transfer is arranged, the estimate submitted for the purchase of a nursery should be urgently requested of Congress.

At the beginning of the fiscal year the systematic trimming of trees was undertaken, and commencing at Rock Creek as the western limit, with Pennsylvania and Florida avenues as the north and south boundaries, the work was continued eastwardly as far as Fourth street east. In the area covered by this treatment all trees were cleared of dead, low, and other objectionable branches, with the result that they were much improved in appearance. Owing to the lack of funds, it was not practicable, without neglecting other urgent work, to cover more territory than this, but it is a matter of growing importance that all of the larger trees should receive this attention annually. The silver maples are responsible for the largest outlay in trimming, this variety being planted years ago to the exclusion of many kinds whose subsequent use has proved more advantageous. This tree, as a street variety, is noted for the early decay of its branches and requires close attention to keep it in proper condition. In addition to the above, the "floating gang" accomplished much trimming on individual requests.

The large increase in the scattering work noticeable during the past year has taxed to the utmost the efforts of the small force engaged on it, and serves to forcibly bring to our attention the necessity for providing a more rapid means of transportation. In my estimates for the coming year request is made for a motor truck to be used in this and other work when necessary.

Trees removed during the year aggregated 2,151, and consisted of the following kinds and numbers:

Ailanthus.....	4	Oak:	
Ash.....	8	Black.....	1
Catalpa.....	18	Pin.....	43
Cedar.....	4	Pyramidal.....	7
Cherry.....	4	Swamp white.....	1
Elm.....	83	White.....	4
Ginkgo.....	8	Red.....	3
Hemlock.....	1	Osage orange.....	2
Horse chestnut.....	1	Peach.....	3
Linden.....	79	Pine.....	3
Locust.....	37	Poplar:	
Magnolia.....	2	Aspen.....	27
Maple:		Athenian.....	20
Norway.....	412	Carolina.....	122
Silver.....	681	Sweet gum.....	1
Sugar.....	116	Sycamore.....	336
Sycamore.....	1	Spruce, Norway.....	2
Mulberry.....	6	Tulip.....	38
Negundo.....	72	Walnut, black.....	1

Of the above trees, 1,898 were curb growths, many of which have already been replaced and are included in the planting lists above; 191 were parking trees; 48 were

taken from sidewalks; 13 from alleys and unimproved roadways, and 1 from a school yard. Deaths of these trees were due to various causes, the principal ones being as follows:

Dead, decayed, and dangerous:

Killed by gas.....	63
Killed or made dangerous by horses .....	24
Killed by salt.....	4
Unexplained.....	1, 225

1, 316

Street, building, and other improvements.....	342
Storms.....	65
Inferior and stunted specimens .....	400
Excessive shade.....	28

Total ..... 2, 151

For violation of the tree regulations, a total of 9 arrests were made during the year. Resultant from these, one offender was fined \$75 for removing a curb tree without a permit and 8 forfeitures of collateral were accepted for minor violations or injuries, the sum collected on this last-named account totaling \$45. Fines and forfeitures of collateral amounted to \$120, all of which was the result of vigilance on the part of our employees.

Much headway was made against the annual visitation of the caterpillars, and millions of eggs and cocoons were destroyed by the aid of the usual remedies. The territory wherein most of these pests congregate is in the older part of the city and principally in the business section. Consequently these neighborhoods received particular attention, although a large amount of work of a scattering nature was required in other streets. From Fourteenth street west to Fifth street east and from K street north to H street south vigorous use was made of the hot-blast torch, effectually destroying the eggs and cocoons, while the strong force of water from the fire hydrants was employed to rid the branches of the living insects. This department was the first in Washington to use the blast torch to fight insects, and in the few years since its introduction it has accomplished wonders as an enemy of the leaf eaters. The spraying of the trees with hydrant water has had a dual effect: First, that of removing the caterpillars and washing them into the sewers; and second, the benefit produced on roots and branches by the liberal use of pure water, as against a poisoned supply. Owing to the rather heavy crop of insects noticeable during the present spring and summer months, and in answer to many inquiries received by the office relative to their nature and origin, I beg to submit the following brief data concerning the three most destructive leaf-eating insects prevalent in the shade trees of our city:

#### ELM LEAF-BEETLE.

(*Galerucella luteola* Mull.)

This insect is an imported one, being a native of southern Europe and the islands of the Mediterranean. It was introduced in America in 1837 and is now exceedingly destructive throughout all of the central Eastern States. In this city there are two and sometimes three generations annually, the beetles which are hatched in the early spring from the eggs of the overwintered beetles and those developed from the eggs laid by this crop. The latter usually put in their appearance about August and the third crop the last of September or the first of October. Elm trees are the only food plants known which this insect attacks. The English elm (*Ulmus campestris*) is its favorite food, while the American elm (*Ulmus Americana*) ranks next. Where the *Ulmus campestris* is present, other elms are seldom seriously attacked, but where it is absent or is surrounded by American elms, the latter are usually materially injured. Throughout the winter the insect is in the beetle or adult form, and makes its quarters wherever it can find shelter, usually in the loose bark of trees, in the cracks of fences, in unoccupied houses, etc. As soon as the buds of the trees begin to swell in the spring the beetle issues from its quarters and mates, and when the buds burst it commences to feed upon the leaflets. This first feeding by the adult beetle continues until the leaves are fairly well grown, and during the latter part of this period the female is engaged in laying her eggs, the same being placed on the under side of the leaf in two or three irregular rows. The larvæ are hatched in about a week's time and immediately begin eating the parenchyma from below, skeletonizing the leaf. Full growth is reached in from fifteen to twenty days, and at the end of that time they either

crawl down the trunk of the tree or fall to the ground from overhanging branches. It is here that they are transformed into light, orange-colored pupæ, a little over a quarter of an inch in length, in which state they remain from six to ten days, when they are again transformed, this time into beetles.

#### WHITE-MARKED TUSSOCK MOTH.

(*Orgyia leucostigma* Smith & Abbot.)

This pest is a native of North America and ranges on the eastern coast from Florida to Nova Scotia and probably as far west as the Rocky Mountains. Its food is practically all varieties of shade, fruit, and ornamental trees, with the exception of the conifers. In Washington it attacks chiefly the silver maples, poplars, and elms, but is also found on the other maples—the locusts, the sycamores, the catalpas, the ash, the horse-chestnuts, and the negundos. The insect passes the winter months in the egg state, these eggs being laid by the female moth in the latter part of September in a white, frothy looking mass attached to the outside of the cocoon. In this city there are three generations annually, one in April and May, one in August, and the last in October. Like all moths and butterflies, this insect has a complete metamorphosis. It casts the skin five times, presenting a different character after each molt. Like the larvæ of the elm-leaf beetle, the newly hatched young feed on the under surface of the leaf, skeletonizing it. After the first molt this process continues, but a few holes are eaten entirely through the leaf; after the second, many holes are eaten through between the main ribs, and after the third molt the leaf is practically devoured except for the midrib and its largest branches. Following the fourth molt, the insects begin to eat from the edge of the leaf and devour everything except the principal veins. The larval state lasts from a month to five weeks, and when full grown the larvæ spin delicate grayish cocoons of silk mixed plentifully with hairs. A few hours after its completion the transformation to the pupa occurs, in which state the insect remains from ten days to two weeks. The male and female then issue from their respective cocoons (the former very active and winged and the latter altogether wingless), and are mated, after which the female begins laying its eggs, attaching them to the lower half of the cocoon. When this has been entirely accomplished the female dies and usually falls to the ground, although it sometimes remains hanging by its legs to the upper part of the cocoon. To combat this insect it is necessary to destroy the eggs during the winter months by means of the hot-blast torch or by scraping off with a heavy wire brush, and the spraying when in leaf with arsenate of lead to kill the larvæ. It is also advisable to place a broad, thick strip of raw cotton to prevent the ascent of the caterpillar to the branches and foliage and the subsequent development of moths and laying of eggs there.

#### THE FALL WEBWORM.

(*Hyphantria cunea* Drury.)

This insect is typically American and is found from Canada to Alabama and from the Atlantic coast as far west as a straight line connecting Montana and Texas. It feeds on almost every known variety of tree. The District of Columbia has two generations, one about June and the other in August. The insect winters as a pupa in a cocoon attached to tree boxes, fences, or its food plant. The moth is either white or white-spotted with black, and flies at night, depositing a cluster of 400 to 500 eggs on either the under or the upper surface of the leaf. The caterpillars feed in colonies, each spinning a web which may in time include the leaves of an entire limb. When the caterpillars reach full growth, they leave the web and crawl down the trunk of the tree to spin their cocoons. In contrast to the tussock moth, the adult female of this species is an active flier, and therefore it is only possible to use two of the remedies suggested for the extermination of the tussock moth, namely, spraying and the burning or scraping off of the cocoons. Another method which may be used successfully is the clipping off of the affected branches where this will not destroy the symmetry of the tree.

During the fiscal year it has been possible to secure for the information of the office and general public a satisfactory map showing the extent of the tree service. This map shows accurately all lines of shade trees in the city, both curb and parking. It was obtained by using one of the highway maps of the year 1908 and ruling in with red ink the curb rows of trees and with blue, those in the parking. This is the first map of the kind made since 1891 and a glance at the two forms a very interesting comparison.

In connection with the preparation of the map, a complete card record was developed to indicate by blocks the condition of each planted street. Something of the magni-

tude of this task may be gleaned when it is reflected that the close of the fiscal year showed a total of nearly 98,000 trees on the streets. Up to this time it was not possible to tell from any record in the office the respective kinds of trees on individual streets, thus rendering an inspection necessary oftentimes to secure but fragmentary information. In compiling this record about 1,500 3 by 5 inch record cards were used. Many requests are received from public-school teachers and citizens to be furnished with the information carried in this record, the former desiring to have their pupils make a study of the subject, and it would be a source of gratification to the office if each of the applicants could be supplied with the printed information, as well as a reduced copy of the map.

The office was fortunate in securing for a limited period last summer the services of a photographer, through whose efforts a number of good views were made illustrative of street-tree work. The best of these have been appropriately framed and hung in the office, forming an attractive feature in the furnishing of the room, as well as being useful in describing our work to visitors. Following the idea adopted by many large cities interested in shade trees, it would be well if Washington, the pioneer city in this work, could have prepared for distribution an illustrated report showing the part it has taken in the movement. This office has a good collection of reports from other cities and it would be no more than proper that we reciprocate in kind.

On May 15, 1910, Capt. Edward M. Markham, then in charge of this division, directed that it henceforth assume jurisdiction over the regulation of terrace and parking heights throughout the District, together with the examining and passing of all applications for copings and retaining walls on the public streets. Up to July 1, 92 such applications were received and forwarded with recommendations to the permit clerk and inspector of buildings. Shortly after the beginning of the fiscal year, however, the duty of passing applications for copings and retaining walls was returned to the office of the engineer of highways, this step being taken because of the close relation existing between this work and the construction of sidewalks, curbs, etc. The requests for terracing and grading parkings are usually received as part of the applications for building permits, and a plan has been devised jointly between this office and that of the inspector of buildings whereby the last named prepares an extract covering the parking work and forwards it here for inspection and recommendation. By this method each office is enabled to work independently on its portion of the matter, which results in the saving of much delay in the final issuance of building permits. To properly record this work, a card system was prepared, capable of covering every street in the District, and when an application is received immediate reference is had to ascertain what previous action, if any, has been taken relative to terrace heights in the particular block in question. It is readily seen that by applying such a check a system of uniform terraces throughout each block will be the ultimate outcome. In many of the streets built upon in the past, no apparent effort was made to secure this uniformity, and the lack of close record of actions taken has resulted in confusion in a number of cases.

Many complaints are received from time to time against the presence of vacant tree spaces in the paved sidewalks which for various reasons should not be planted. A determined effort was made during the past year to eliminate as many of these as possible, and up to the close of the year a total of 148 had been paved in the northwest, northeast, and southeast sections, this work being done by the surface division.

Inspections made during the year totaled 806, while the number of work orders executed amounted to 685, the latter necessitating the visiting of 3,322 separate locations. Four hundred and ninety-three official files were acted on during the year, and in their transmission 675 indorsements were written. Other work in the office involved the preparation and forwarding of 28 pay rolls and special vouchers; 79 requisitions for supplies; 18 transfer vouchers. One hundred and fifty-seven vouchers for supplies were approved, recorded, and transmitted to the proper authority. Recommendations for work originating in this office totaled 30. Thirty-five reports of gas leakage in tree spaces, covering detailed statements on 167 individual spaces, were forwarded to the Washington and Georgetown gaslight companies, and in most cases given prompt attention by them. Two hundred and twenty-six letters were mailed direct from this office to private individuals, 24 car-ticket and stamp reports were forwarded, and for the purchase of soil in various localities 20 new accounts were opened. This office finds it convenient to arrange for the storage of soil in whatever locality it is found, giving the owner of the property from which it is taken a dumping place near by on the public parking.

It is with regret that I record herewith the death, on November 24, 1909, of Mr. John W. Langdale, assistant superintendent of this division. Mr. Langdale held this position for eighteen years, and his thorough knowledge of tree work and horticulture in general makes his loss an important one to the service.

*Summary.*

Trees in streets, parkings, sidewalks, and school yards at close of the fiscal year 1909.....	96,075
Trees planted during fiscal year 1910.....	4,030
Trees removed from streets, parkings, sidewalks, and school yards, 1910.....	<sup>a</sup> 2,151

Net increase of trees during 1910..... 1,879

Trees in streets, parkings, sidewalks, and school yards at close of the fiscal year 1910.....	97,954
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NOTE.—The balance of trees at close of fiscal year, as reported in the above statement, represent the total number which are continuously under the care and control of this office.

Curb trees on streets at close of fiscal year 1909.....	94,799
Increase of curb trees during fiscal year 1910.....	2,127

Curb trees on streets at close of fiscal year 1910..... 96,926

Mileage of tree-planted streets, close of year 1909.....	529.26
Increase of mileage during fiscal year 1910.....	6.04

Mileage of tree-planted streets, close of year 1910..... 535.30

NOTE.—Mileage is figured on the basis of 352 trees per mile.

*Expenditures.*

## LABOR.

Planting trees.....	\$2,255.14
Digging tree holes.....	7,193.68
Piling soil.....	53.50
Nursery care and maintenance.....	2,595.03
Digging trees in nurseries.....	195.32
Trimming street trees.....	6,851.08
Cultivating young street trees.....	2,726.96
Improvement of reservations.....	719.74
Mowing parkings and reservations.....	1,113.77
Gas searches by District employees.....	15.18
Removing dead and dangerous trees.....	3,067.78
Wiring street trees.....	42.25
Extermination of insects.....	1,186.35
Watering young street trees.....	239.58
Clerical and inspection work.....	2,001.50
Gathering seed.....	16.00
Miscellaneous repairs to boxes, etc.....	387.17
Yard maintenance.....	2,682.64
Military duty with National Guard.....	44.75
Labor Day payments (to laborers).....	94.25
	<hr/>
	\$33,481.67

## MATERIALS, REPAIRS, ETC.

Allotment to property clerk.....	\$100.00
Adding machine.....	140.00
Car tickets.....	10.00
Fertilizer.....	42.75
Forage.....	1,983.78
Fuel.....	23.39
Furniture and office supplies.....	80.64
Grass seed.....	94.79
Ice.....	4.80
Leather straps.....	216.00
Lumber for boxes (stakes included).....	3,397.94
Lumber, miscellaneous.....	60.19

<sup>a</sup> In addition to these, 13 were removed from alleys and unimproved roadways, but did not diminish the number included in official count.

Nails, screws, bolts, etc.....	\$179.39	
Paints, oils, glass, harness dressing, and axle grease.....	117.03	
Soil.....	342.10	
Stationery and printing.....	97.79	
Tools and agricultural implements.....	141.34	
Trees and shrubs.....	457.90	
Miscellaneous repairs and improvements.....	106.00	
Electric current.....	12.00	
Buggy and wagon findings, and repairs.....	239.15	
Iron and steel, horseshoes, and pads.....	103.78	
Stable supplies and equipment for teams.....	148.71	
Sundries.....	80.55	
	<hr/>	\$8, 180.02
By appropriation, fiscal year 1910.....		\$40,000.00
By repayments, fiscal year 1910.....		1,674.69
To balance of appropriation unexpended.....	13.00	
	<hr/>	<hr/>
Total.....	41,674.69	41,674.69

*Statement showing sums paid during the year for purchase or maintenance of horses, harness, and wagons, together with the amounts expended for cart and wagon hire.*

[NOTE.—These items also included in material list.]

Forage for 15 horses.....	\$1,983.78	
Miscellaneous items.....	491.64	
	<hr/>	\$2,475.42
Cart hire, 2,508 days, at \$2.25 per day.....	5,642.96	
Wagon hire, 298 days, at \$4 per day.....	1,192.00	
	<hr/>	6,834.96
Total.....		9,310.38

*Statement showing sums paid to per diem employees during the fiscal year from appropriation "Streets, District of Columbia, 1910, parking commission."*

Inspector, 304 days, at \$3.25 per diem.....	\$988.00
Copyist, 307 days, at \$3 per diem.....	921.00
Total.....	<hr/> 1,909.00

*Expenditures from various appropriations.*

[Exclusive of parking commission.]

	Direct charge.	Through repayment.
Miscellaneous trust-fund deposits.....	\$1,647.07	\$1,166.07
Elimination of grade crossings.....	1,028.44	365.43
Public playgrounds, maintenance, etc.....	173.88	124.61
Improvements and repairs:		
Assessment and permit work.....	221.76	8.21
Northeast schedule.....		10.37
Repairs to streets.....	34.46	
Southwest schedule.....	4.50	
Grade and improve School street.....	3.00	
Public schools:		
Repairs to school buildings and grounds.....	6.31	
Postage fund.....	43.00	
Contingent and miscellaneous expenses:		
Engineer department allotment.....	24.70	
	<hr/> 3,187.12	<hr/> 1,674.69

Respectfully submitted.

TRUEMAN LANHAM,  
Superintendent of Trees and Parkings,  
District of Columbia.

Capt. MARK BROOKE,  
Corps of Engineers, U. S. Army,  
Assistant to the Engineer Commissioner,  
District of Columbia.

## REPORT OF SPECIAL ASSISTANT COUNSEL ON GRADE DAMAGES.

WASHINGTON, July 27, 1910.

SIR: In the matter of the appraisement of the damages which have resulted to real property in the District of Columbia by reason of the changes made in the grades of streets, avenues, and alleys in connection with the Union Railroad Station and terminal work, I have the honor to submit the following report for the fiscal year which ended June 30, 1910.

There were 133 claims for damages heard and determined by the grade-damage-commission during the year, involving 170 pieces of realty. In 92 of these cases damages were awarded landowners, aggregating \$104,810, while in 41 of the cases the commission awarded no damages whatever to the claimants, for the reason that the damages alleged to have resulted to the properties under consideration had been offset by the benefits and advantages shown to have accrued to the property in consequence of the elimination of grade crossings, the establishment of the Union Railroad Station and terminals, and the works, buildings and improvements incidental thereto.

The Commissioners of the District of Columbia expressed dissatisfaction with the appraisements of the commission in 36 of the cases tried during the year, whereupon the supreme court of the District passed orders vacating and setting aside the appraisements of the commission and directing the United States marshal to summon a jury of seven citizens in such cases to appraise and determine the amount of damages to which the claimants may be entitled, as provided by section 5 of the act of Congress approved April 22, 1904, entitled "An act to provide for payment of damages on account of changes of grade due to the construction of the Union Station, District of Columbia."

The sum of \$11,375.50 was saved to the District during the year by the compromise of 32 cases in which jury trials had been ordered by the court, upon the filing by the Commissioners of the District of Columbia of expressions of dissatisfaction with appraisements made by the commission, as will hereinafter appear.

During the year there were 67 petitions for damages filed, which make a total of 850 petitions that have been filed with the clerk of the supreme court of the District of Columbia since the passage of the act of Congress approved April 22, 1904.

The appraisements made by the commission during the year were as follows:

Lot.	Owner.	Award.
Property abutting on Massachusetts avenue NE., between First and Second streets, in square 723:		
Lot 43.....	Robert Nicholson.....	\$3,000.00
Lots 44, 45, and 46.....	Joseph M. Carmody.....	Nothing.
Lot 63.....	Margaret M. Barrick, administratrix, substituted as petitioner in place of Charles E. Barrick.....	2,950.00
Lots 64 and 65.....	Park Agnew, trustee.....	4,075.00
Lot 66.....	Ida M. Hill and Melissa Hill.....	2,050.00
Lot 67.....	Gerardo Tassa.....	1,975.00
Lots 68 and 69.....	Washington City Orphan Asylum, Joseph J. Darlington, president.....	3,950.00
Lot 70.....	Harrie F. Wheat.....	2,000.00
Lot 76.....	Joseph Auerbach.....	1,350.00
Lot 77.....	Isabel H. Weber.....	1,250.00
Lot 78.....	Arlington Fire Insurance Co., trustees.....	1,100.00
Lot 79.....	Margaret Hesford, Richard W. Tyler, and Robert G. Rutherford, trustees.....	600.00
Lot 80.....	Emma E. Shepard.....	550.00
Lot 100.....	William and Mary P. Twombly.....	775.00
Lot 101.....	John Donnelly, jr.....	500.00
Lot 102.....	James K. White and Gertrude M. White.....	475.00
Lot 103.....	Margaret B. Rankin.....	450.00
Lot 16.....	Malcolm Hufty.....	Nothing.
Lot 17.....	John C. Avery.....	200.00
Lot 18.....	John F. Reinhart.....	250.00
Lot 19.....	Angusta Hoffa.....	250.00
Lot 2.....	William H. Harnsberger.....	Nothing.
Lot 22.....	Laura Barnes Simpson.....	Nothing.



Lot.	Owner.	Award.
Property abutting on Massachusetts avenue NE., between E and Second streets, in square 722:		
Lot 41.....	Charles P. Jacobs.....	\$1,500.00
Lot 35.....	Isaac G. Peetrey.....	500.00
Lot 34.....	John E. Sheckells.....	650.00
Lot 33.....	Dennison P. Rowell.....	570.00
Lot 32.....	John V. Wurde mann.....	720.00
Lot 31.....	Philip M. Elkins.....	660.00
Lot 21.....	Mary E. Sage.....	Nothing.
Lot 20.....	Margaret A. Casey.....	Nothing.
Lot 19.....	Clifford U. Smith.....	Nothing.
Lot 18.....	Mary D. Sutton.....	Nothing.
Lot 17.....	William E. Sims, agent for Elvira E. Snyder.....	Nothing.
Lot 16.....	James C. Carroll.....	Nothing.
Lot 14.....	Martha E. Allen.....	Nothing.
Property abutting on E street NE., between Massachusetts avenue and Second street, in square 722:		
Lot 25.....	Stephen B. D. Rollins.....	Nothing.
Sublot 22.....	William Wallace Nairn, Annie H. Paul, Carrie N. Hall, and Josephine N. Stowell.....	Nothing.
Sublot 24.....	Samuel R. Henry.....	Nothing.
Property abutting on E street NE., between Massachusetts avenue and Second street, in square 721:		
Lots 96 and 97.....	Gaudenzio Riani.....	900.00
Lot 98.....	Eleanor E. Hunt, Rose D. Hunt, and Virginia E. Hunt, executors.....	750.00
Lot 99.....	Mathilde Goldschmidt.....	500.00
Lot 100.....	Alice M. Boswell.....	600.00
Lot 101.....	Louisa C. Moore.....	600.00
Lot 102.....	Elizabeth O'Beirne.....	1,400.00
Lot 103.....	Harriet M. Storch.....	1,500.00
Lot 104.....	Clara M. Stine.....	1,500.00
Lot 105.....	Frances Hyde Engeman.....	2,000.00
Lot 106.....	Estate of Jane E. Munder.....	2,100.00
Lot 107.....	Ella H. Enoch.....	2,075.00
Lot 108.....	Edward Helmuth.....	2,180.00
Lot 109.....	Julian L. Hammack.....	2,080.00
Lot 110.....	Frank McClelland.....	2,140.00
Lot 111.....	J. Whit Herron.....	2,175.00
Lot 166.....	W. H. Spelshouse.....	2,400.00
Property abutting on Second street NE., between F and California streets, in square 721:		
Lot 24.....	Mary Bernadine Kerr.....	1,525.00
Lot 87.....	Michael W. Budd.....	1,975.00
Lot 86.....	Ernest Lent.....	1,975.00
Lot 85.....	Mary Jaeger.....	2,165.00
Property abutting on Second street NE., between E and F streets, in square 754:		
Lot 28.....	Fannie W. Waite.....	Nothing.
Lot 33.....	Charles E. Tribby.....	Nothing.
Lot 36.....	Frank S. Lerch and Do- rothea Lerch.....	Nothing.
Property abutting on Second street NE., between F and G streets, in square 753:		
Lot 92.....	Edwin C. Bartlett.....	1,000.00
Lot 93.....	George S. French.....	700.00
Lot 94.....	Lorenzo C. Hover.....	700.00
Part of lot 96.....	Lottie B. Hahn.....	700.00
Lot 159.....	Minnie Goldsmith.....	500.00
Lot 160.....	Adelaide Alexander and Hortence A. Slaymaker.....	475.00
Lot 176.....	William A. Donch.....	450.00
Sublot 56.....	Henrietta Gould.....	300.00
Lot 57.....	Samuel D. Houck.....	275.00
Lot 58.....	Edward F. Kammerer.....	250.00
Lot 107.....	John D. Quay.....	Nothing.
Lot 108.....	George Loughery.....	Nothing.
Lot 29.....	Walt T. Dreht.....	Nothing.
Sublot 31.....	William K. Hill.....	Nothing.
Lot 66.....	Kate B. Bloomer.....	Nothing.
Lot 67.....	Richard G. Lohmeyer.....	Nothing.
Lot 68.....	August A. Ruppel.....	Nothing.
Property abutting on F street ne., between Second and Third streets, in square 753:		
Sublot 118.....	Frederick A. Beyer.....	Nothing.
Sublot 119.....	Joseph A. Frank.....	Nothing.
Lot 120.....	Katherine G. Barthel.....	Nothing.
Sublot 121.....	Conrad R. Muller.....	Nothing.
Sublot 98.....	John F. Herrmann.....	200.00
Sublot 99.....	William W. Vaughan.....	225.00
Sublot 100.....	John F. Herrmann.....	225.00

Lot.	Owner.	Award.
Property abutting on F street ne., between Second and Third streets, in square 753—Continued.		
Lot 101.....	William A. Gebick, Christopher Gebick, Julius Gebick, and Louis C. H. C. Gebick.	\$275.00
Sublot 102.....	Michael D. Deenihan.....	275.00
Sublot 89.....	James A. McDowell.....	275.00
Lot 90.....	Margaret M. Daly.....	275.00
Lot 91.....	Sebastian J. Hauslein.....	300.00
Property in squares 463, 465, and 693:		
Lot 2.....	Jesse W. Lown, Bertha V. Keppler, and Mary Gover.	Nothing.
Sublot 20.....	R. Harrison Johnson and Mary F. Swan, trustees.	Nothing.
Part of lot 11.....	Charles C. Barber.....	75.00
Property abutting on the east side of Seventh street in square 464:		
Lots 16, 17, and part of lot 11.....	Capital Construction Co.....	10,000.00
Sublot 23 and part of original lot 11.....	Samuel Solomon.....	700.00
Property in squares 434 and 464:		
Parts of original lots 1, 2, and 3.....	Max Needle.....	150.00
Sublot A.....	Anna J. Wolfsteiner.....	650.00
Part of lots B and C, southwest parts of lots D and C, all of lot E.....	Samuel Solomon, Rose Saks, and Rebecca Solomon.	3,500.00
Lot 22.....	Franklin V. Killian.....	1,200.00
Parts of original lots 11 and 12.....	William Lowenthal.....	5,000.00
Part of original lot 1 and lot 25.....	Nikolaus Auth and John Auth, trustees, and the N. Auth Provision Co.	400.00
Lots 12 to 15, 20, 21, 22, and all of lots 18 and 19.....	Charles Graff and John N. Auth, trustees, and the N. Auth Provision Co.	3,100.00
Property in squares 434 and 385:		
Sublot 23.....	R. Harrison Johnson and Mary F. Swan, trustees.	300.00
Tract of land containing 21,226 square feet fronting on Eighth street and C street sw.	Academy of the Sacred Heart of Mary.	250.00
Parts of original lots 3 and 4.....	Charles R. L. Crown.....	315.00
Part of lot A.....	James H. Taylor, executor and trustee, and Lemuel T. Ergood.	415.00
Part of lot 5.....	James S. Topham.....	565.00
Part of lot 6.....	Harriet C. Hepburn, Maude E. Cornwall, David Hepburn, and William Hepburn.	450.00
All of part of original lot 6.....	Sarah Eskins.....	525.00
Lots A and B.....	James M. Hall and George W. Hall.	450.00
Part of original lot 6.....	Louisa E. Dentinger.....	1,850.00
Property in square 352:		
Lot A.....	William Van Zandt Cox and Mary A. Emery.	3,000.00
Lots B and C.....	William James Howard.....	200.00
Part of lot D.....	Maude Brice.....	800.00
Lot D.....	Mary Volk and Minnie Volk.	700.00
Lots 23, 24, 25, and 26.....	Mary Virginia Harvey and Conway Robinson, executrix and executor.	1,200.00
Property in square north of square 931.....	John Mangan.....	225.00
Property in square 628: Lot 116.....	Walter F. Rogers, executor..	150.00
Property in square 675:		
Lot 274.....	Mrs. M. K. Hemingway.....	Nothing.
Lot 115.....	Marshall L. Smith.....	Nothing.
Lot 113.....	Delia McDonald.....	Nothing.
Lot 112.....	Bertha Odenwald.....	Nothing.
Lot 110.....	Margaret M. Montgomery.....	Nothing.
Lot 107.....	Sarah G. Mullen.....	Nothing.
Lot 98.....	Mary Murphy.....	Nothing.
Lot 96.....	Elizabeth O'Neill.....	Nothing.
Lot 95.....	Julia A. Boyd.....	Nothing.
Lot 93.....	Sarah H. Pritchard.....	Nothing.
Lot 91.....	Daniel Egan.....	200.00
Lot 204.....	Mary D. Shea.....	Nothing.

The compromises effected with landowners during the year in cases wherein jury trials had been ordered by the court upon the application of the Commissioners of the District of Columbia were as follows:

Lot.	Owner.	Award.	Compromise.
Lot 64 (part), square 628	James A. Maher et al.	\$2, 450	\$2, 250
Lot 85, square 723	James R. Beattie	2, 300	1, 800
Lot 87	Emil G. Schaffer	2, 125	1, 800
Lot 88	William A. Leetch et al.	2, 125	1, 800
Lot 89	Edward Haley et al.	2, 175	1, 800
Lot 93	August Donath	2, 300	1, 800
Lot 43	Robert Nicholson	3, 000	2, 000
Lot 63	Margaret M. Barrick, administratrix	2, 950	2, 360
Lot 66	Ida M. Hill et al.	2, 050	1, 550
Lot 67	Jerardo Tassa	1, 975	1, 500
Lots 68 and 69	Washington City Orphan Asylum	3, 950	3, 150
Lot 76	Joseph Auerbach	1, 350	1, 000
Lot 78	Arlington Fire Insurance Company	1, 100	900
Lot 79	Margaret Hesford	600	480
Lot 80	Emma E. Shepard	550	440
Lot 100	William and Mary Twombly	775	500
Lot 101	John Donnelly, jr.	500	400
Lot 102	James K. White et al.	475	375
Lot 103	Margaret B. Rankin	450	360
Lot 17	John B. Avery	200	160
Lot 18	John F. Reinhardt	250	200
Lot 106, square 721	William C. Munder, jr., administrator	2, 100	1, 700
Lot 107	Ella H. Enoch	2, 075	1, 675
Lot 108	Edward Helmuth	2, 180	1, 780
Lot 109	Julian L. Hammack	2, 080	1, 680
Lot 110	Frank McClelland	2, 140	1, 640
Lot 111	J. Whit Herron	2, 175	1, 675
Lot 166	W. H. Spelshouse	2, 400	1, 750
Lot 24	Mary B. Kerr	1, 525	1, 250
Lot 87	Michael W. Budd	1, 975	1, 700
Lot 86	Ernest Lent	1, 975	1, 700
Lot 85	Mary Jaeger	2, 165	1, 890

There were 14 claims for damages heard and determined by "appeal juries" during the year, the appraisements being as follows:

Lot.	Owner.	Appraisalment.
West 12½ feet of subplot 8, in square 625	Thomas McMahon	Nothing.
Lot 9	Jeremiah O'Leary	Nothing.
Lot 34 and part of lot 35, in square 626	Nora O'Leary, John R. Davis, Nellie T. Davis, Mary G. Davis, Nora Davis, William Davis, and Margaret Davis	\$300
Sublot 32	Nellie Quill	250
Sublot 27	John Rudden	190
Lot 49	William A. Barnes, sr.	150
Lots 47 and 48	L. Bartholomew Gleason	300
Lot 44	Mary Costello, Katie E. Rogers, Mary Ready, Teresa Costello, and Margaret Costello	125
Lot 43	John W. Meyer	125
Sublot 42	Ella E. Steele	200
Lot 20	Julia T. Dillon and Annie A. Dillon Welch	100
Part of lot 39 and lots 40 and 41	Mabel Watkins and Paul De Forest Wollard	1, 000
The east one-half of lot 9	Dennis Quill, Thomas Quill, Daniel Quill, and John Quill	300
Lot 12	Leon Tobriner	600

There were only fifteen cases awaiting trial by jury at the close of the year. Many of the cases in which "appeals" were taken from appraisements made by the commission have been compromised.

On May 7, 1910, George Truesdell, the owner of a series of unimproved lots on the south side of T street and a lot, improved by a frame dwelling, on the north side of T street, between Fourth and Fifth streets NE., filed a petition with the grade damage commission to recover damages alleged to have resulted to his property

by reason of the erection of the approaches to the T Street Bridge over the tracks of the Baltimore and Ohio Railroad Company. A demurrer was filed to the petition on behalf of the District, alleging, among other things, that the erection of the approaches to the bridge did not constitute a change of the grade of T street, and that therefore the commission was without authority to entertain the petition. After hearing argument thereon, Mr. Justice Stafford, of the supreme court of the District, sustained the demurrer. Mr. Truesdell thereupon, with leave of the court, amended his petition, but the case has not been heard on the petition as amended.

The work of changing the grade of the following-named streets, avenues, and alleys was reported completed during the year:

First street NE., from C street to D street.

D street NE., from First street to Second street.

California street NE., from the Union Station Plaza to Second street.

G street NE., from North Capitol street to First street.

North Capitol street, from C street to E street.

The alleys in square 677.

I street NE., from North Capitol street to First street.

Myrtle street NE., from North Capitol street to First street.

I street NE., from Third street to Fourth street.

Florida avenue NE., from Ninth street to Tenth street.

D street NE., from Delaware avenue to First street.

D street SW., from Eleventh street to Fourteenth street.

Maryland avenue SW., from Eleventh street to Twelfth street.

D street SW., from Ninth street to Eleventh street.

Tenth street SW., from D street to E street.

Ninth street SW., from C street to D street.

C street SW., from Eighth street to Ninth street.

Virginia avenue SW., from Four-and-a-half street to Sixth street.

Virginia avenue SW., from Third street to Four-and-a-half street.

Virginia avenue SW., from Second street to Third street.

Virginia avenue SW., from First street to Second street.

Virginia avenue SW., from South Capitol street to Delaware avenue.

South Capitol street SW., from E street to G street.

Third street SW., from D street to Virginia avenue.

Ivy street SE., from New Jersey avenue to Canal street.

And the alleys in square 693.

At the close of the year the sum of \$31,525 had been saved to the District by the compromise of 74 of the cases in which appraisements of the grade damage commission were set aside upon the application of the Commissioners of the District of Columbia for a jury trial.

The total amount paid out by the District in settlement of grade damages up to the close of the year was \$403,243.10.

In conclusion, I take pleasure in acknowledging the industry and efficiency of Mr. Leonard P. Bradshaw and Mr. M. K. Varnell, my assistants, in the discharge of their respective duties during the year.

I have the honor to be, very respectfully, yours,

A. LEFTWICH SINCLAIR,  
*Special Counsel, District of Columbia.*

Capt. MARK BROOKE,

*Corps of Engineers, U. S. Army,*

*Assistant to the Engineer Commissioner, D. C.*

## SUBSURFACE AND BUILDING DIVISION.

Capt. EDWARD M. MARKHAM,

*Corps of Engineers, United States Army, Assistant to the Engineer Commissioner, in Charge.*

WATER DISTRIBUTION.....	W. A. MCFARLAND, <i>Superintendent Water Department.</i>
WATER RATES.....	G. W. WALLACE, <i>Water Registrar and Chief Clerk, Water Department.</i>
SEWER CONSTRUCTION AND MAINTENANCE.....	ASA E. PHILLIPS, <i>Superintendent of Sewers.</i>
BUILDING INSPECTION.....	MORRIS HACKER, <i>Inspector of Buildings.</i>
BUILDINGS AND REPAIRS TO BUILDINGS.....	SNOWDEN ASHFORD, <i>Municipal Architect.</i>
PLUMBING PLANS AND INSPECTION.....	A. R. MCGONEGAL, <i>Inspector of Plumbing.</i>
GAS AND METER INSPECTION.....	E. G. RUNYAN, <i>Inspector of Gas and Meters.</i>
PERMITS.....	H. M. WOODWARD, <i>Permit Clerk.</i>
AUTOMOBILE BOARD.....	H. M. WOODWARD, <i>Secretary, Automobile Board.</i>
ELECTRICAL DEPARTMENT.....	W. C. ALLEN, <i>Electrical Engineer.</i>

## REPORT OF ASSISTANT IN CHARGE.

OFFICE OF THE ENGINEER COMMISSIONER  
OF THE DISTRICT OF COLUMBIA,  
*Washington, October 12, 1910.*

MAJOR: I have the honor to forward herewith reports of the divisions of the engineer department for the fiscal year ending June 30, 1910, under my charge, including reports of the superintendent of sewers, inspector of buildings, inspector of plumbing, municipal architect, and the permit clerk, and also the reports of the superintendent water department, water registrar, electrical engineer, inspector of gas and meters, and the automobile board, which are also under my charge. This division has been under my charge since July 2, 1910; prior to that time it was under the charge of Capt. William Kelly, Corps of Engineers, U. S. Army.

Very respectfully,

EDWARD M. MARKHAM,  
*Captain, Corps of Engineers, U. S. Army,  
Assistant to the Engineer Commissioner.*

Maj. WM. V. JUDSON,  
*Corps of Engineers, U. S. Army,  
Engineer Commissioner, District of Columbia.*

## REPORT OF THE SUPERINTENDENT WATER DEPARTMENT.

WASHINGTON, D. C., *August 13, 1910.*

SIR: I have the honor to submit the following report of the operations of the water department for the year ending June 30, 1910.

The cash collections during the year amounted to \$600,184.36, while unexpended balances from previous allotments, deposits for special work, etc., brought the total available funds for the year up to \$710,361.50. (See Table I.) The total disbursements were \$620,243.69, leaving a nominal balance of \$90,117.81 for beginning the new year.

The general distribution of expenditures for the past two years has been as follows:

	1908-9.	1909-10.
	<i>Per cent.</i>	<i>Per cent.</i>
New work.....	42.2	56.8
Operation.....	40.8	33.2
Repairs.....	12.5	8.1
Replacement of old work.....	4.5	1.9

The balance on hand makes possible a slight increase in the rate of meter installation, and a contract for 3,000 meters, or more, will be made at once.

During the year 142,133 feet of water main of all sizes were laid, 15,601 feet being of 20-inch trunk main.

This is an increase of 45,337 feet, or 47 per cent over the length laid during the preceding year, and of 84 per cent over that laid during the year preceding that.

The total length of water mains in the system is now 500 miles.

A detailed statement of routine work accomplished is given in the accompanying tables, to which attention is invited.

I am pleased to report a still further reduction in the mean daily consumption and waste of water in the District, the mean daily rate for the year being 59,200,000 gallons, against 61,200,000 in the preceding year, and 64,500,000 in 1907-8.

The reduction would without doubt have been much greater but for abnormal weather conditions; the winter of 1909-10 being unusually severe, and the spring of 1910 very dry. The reduced rate, as before, is attributable to stoppage of underground leaks by the pitometer division, the increased use of meters, and house inspection.

The underground leaks found during the year, none of which showed on the surface, aggregated 6,364,190 gallons per day. The cost of running this division amounted to \$26,244.82. The value of the water saved during one year, at the regular rate of 4 cents per 1,000 gallons, is \$93,000; and if it be valued at only 1 cent per 1,000 gallons, the saving is \$23,250, or a permanent income of 89 per cent per year on the investment.

Particular attention is invited to the report of the pitometer division (F) on page 92.

A summary of the duties assigned to each division of the department, and of results accomplished, follows:

#### DIVISION A.—*Maintenance and extension of distribution system.*

(J. S. GARLAND, assistant engineer, in charge.)

##### SUBDIVISION A 2.—*General engineering.*

The work of this subdivision consists in the preparation of plans and estimates for water main extensions and allied constructions, in all field work and records incident to the carrying out of these plans, and in engineering work of a miscellaneous character.

The subdivision is in charge of Mr. D. W. Holton.

The work accomplished during the year included 292 surveys for the location of proposed new mains, 55 surveys for the location of proposed new fire hydrants, 2 surveys for the location of proposed new horse fountains, 2 surveys for the location of proposed new sanitary fountains, 23 surveys for the location of rearrangement of mains, by-passes, and connections, 3 surveys for lowering water mains, 20 surveys for private services, 3 to 6 inches, 83 preliminary surveys to ascertain if street is on approved grade (this work is in advance of the ordering of water mains), 10 investigations of water service complaints, 227 fire hydrant elevations established, 495 finished field notes of completed work turned in, and 1,004 visits to work in progress.

Total number of feet of water main of various sizes located was 142,133, which represents approximately the total number of feet of water-main lines surveyed.

All survey, field, and record sheets of proposed and completed work were filed and indexed.

The work of installing new fire hydrant pressure cards in place of old ones is nearly completed.

Samples of earth taken from the water department trenches have been collected and indexed. Total number of samples obtained up to the beginning of the fiscal year, 486. Elevation of point at which sample of earth is taken is established and its location with reference to street intersections is made, both of which are recorded on index cards.

Previous to the laying of water mains this branch examines the plans, passes upon the construction, and prepares bills of material for all projects.

Estimates and specifications for cast-iron pipe and special castings required for laying water mains during the fiscal year 1911 were prepared.

Investigation of sizes and number of services supplying hospitals and charitable institutions was made in order that this department might have more definite information when it became necessary to shut off water supply in water mains supplying them.

Two important 20-inch trunk water mains were laid, one being a line from Sixth and Trumbull streets through Sixth and Fairmont streets, Georgia avenue, and New Hampshire avenue to the north side of Grant Circle, connecting the 12-inch third high service main in Illinois avenue. This gives a direct feed to Brightwood, Petworth, and Takoma Park sections and also affords another line of main to the Reno reservoir. The length of this main was 9,357 feet. A special feature in connection with this work was the laying of an 8-inch water main in Upshur street between New Hampshire and Illinois avenues, which temporarily afforded water supply to the section south of Grant Circle, while the final connection between the 12 and 20 inch water mains was being made; the 12-inch main in Illinois avenue necessarily being out of service between Grant Circle and Gallatin street.

The other 20-inch trunk line was laid in Belt road, Forty-first street, and Western avenue from Ellicott street to Chevy Chase Circle. This work completed a line of 20-inch water main direct from Reno reservoir to Chevy Chase Circle. A special feature of this work was the many curves made necessary owing to the crookedness of Belt road. The length of this main is 6,218 feet.

Both water mains are completely equipped with divide valves, air valves, and blow-offs.

From the end of the 20-inch water main at Chevy Chase Circle a 12-inch water main was laid through Western avenue and Rittenhouse street to Thirty-third street, and an 8-inch water main laid in Thirty-third street between Rittenhouse street and Pinehurst Circle; also an 8-inch water main was laid in Tennyson street east and west from Thirty-third street as far as existing grades would permit. This extension supplies the subdivision of Pinehurst, D. C.

Another important line of 12-inch water main was laid in E street from New Jersey avenue to the Union Station Plaza, and thence around the south side of the Plaza to Massachusetts avenue and E street. This main was much needed as a reinforcement of the gravity service near the Union Station, many old water mains having been abandoned on account of the heavy fill in this vicinity.

A 12-inch water main was laid in B street NW. between Fourteenth and Seventeenth streets, affording a reinforcement direct from the 20-inch main in Fourteenth street to the territory west of Seventeenth street and south of Pennsylvania avenue. During this work an 8-inch water main was extended south from B street in Seventeenth street to the bathing beach.

An important change in the water main was made at the bridge over Rock Creek at Military road. The existing 12-inch water main at this point was laid under the creek bed, rendering it very deep under the bridge approaches. This portion was abandoned and a double line of 8-inch pipe laid on the bridge, connecting with new portions of 12-inch water main on either side.

At Massachusetts avenue and Fifth street NW. the 30-inch trunk water main near the center of Massachusetts avenue was directly beneath the heavy street railway construction, rendering it impossible to repair an existing leak.

A new line of main was laid to the south of the track intersection and the old portion of the 30-inch water main abandoned.

The 12-inch meter at Florida avenue and Delaware avenue NE. on the service-supplying the railroad yards north of Florida avenue was removed and a battery of 4-inch meters installed.

Some work was accomplished on the extension of the first high service in Bloomingdale south from Bryant street between North Capitol and Second street NW.

A small extension of the first high service was made to include the Homeopathic Hospital at Second and N streets NW.

Pegs were placed to locate the proposed pumping station for the fourth high service at Reno reservoir. The building of this pumping station was in progress at the end of the fiscal year.

The taking of water pressures on the first of each month at 100 selected fire hydrants within the five water-service areas of the District was continued.

Prior to the 1st of January, 1910, this work was accomplished with the use of 3 teams, 3 drivers, and 3 men, not including a man stationed at the gatehouse of the Washington reservoir.

On January 1, 1910, an automobile was put in service. This machine does the work of two teams, and the services of one man on this work was dispensed with. Each monthly pressure day the automobile travels about 55 miles and the wagon about 20 miles. This automobile is now constantly in use by one of the field parties.

SUBDIVISION A 3.—*Care of property.*

The work of this subdivision consists in receiving, inspecting, recording, storing, and issuing all material bought for the use of all branches of the department; preparing quarterly returns of unexpended property, and in preparing lists of unserviceable property for condemnation and sale.

The property office, located in the District pumping station on Bryant street, is open at all times, day and night. Mr. S. Q. Kline, storekeeper, has charge, and has regularly under his orders 1 assistant storekeeper, 4 skilled laborers, 1 pipe inspector, 5 laborers, and 2 watchmen.

SUBDIVISION A 5.—*Care and recording of valves, fire hydrants, street hydrants, etc., and care of reservoirs.*

This subdivision is charged with caring for and making and maintaining complete records of all valves, fire hydrants, street hydrants, etc., with the execution of miscellaneous plumbing, and with general supervision over Brightwood and Reno reservoirs.

There have been cared for during the year 6,911 valves, 2,716 fire hydrants, 229 street hydrants, 133 drinking fountains for animals, 11 shallow wells, and 30 deep wells.

This subdivision is in charge of Mr. Humphrey Beckett. The following is from his report:

Valves operated and cleaned.....	10, 120
Valves packed.....	297
Valves fitted with new stems:	
2-inch.....	1
3-inch.....	14
4-inch.....	1
6-inch.....	45
8-inch.....	1
12-inch.....	2
Valves fitted with new key nut.....	9
Valves from which gates were removed.....	2
Valves on which miscellaneous repairs were made.....	13
Valves substituted for old:	
4-inch.....	1
3-inch.....	2
6-inch, 4-stem.....	1
Valves installed (new location), 6-inch.....	1
Valves uncovered.....	118
Air valves installed.....	40
Manholes cleaned.....	1, 862
Casings numbered.....	546
Intersections located.....	811
Indicator posts:	
Erected.....	29
Reerected.....	5
Painted.....	164
Numbered.....	42
Fire hydrants:	
Repaired.....	1, 802
Inspected.....	37, 532
Painted.....	1, 967
Lubricated.....	3, 804
Reversed.....	5
Removed.....	1
Adjusted.....	1
Street hydrants:	
Repaired.....	276
Adjusted.....	1
Removed.....	44
Erected.....	33



Horse fountains:	
Repaired.....	295
Cleaned.....	4, 165
Adjusted.....	1
Erected.....	10
Removed.....	4
Service pipes:	
Repaired.....	52
Adjusted.....	13
Lead connections made for stock.....	31
Pumps repaired.....	46
Drains:	
Repaired.....	4
Adjusted.....	1
Cleaned.....	5
New drains laid.....	2
Wells cleaned.....	1
Wells filled.....	1
Street washers:	
Adjusted.....	3
Erected.....	11
Repaired.....	11
Cut-offs for repair or construction work.....	74
(Where the cut-off is complicated, it is generally handled by this division.)	
"Smith" cuts made:	
2-inch in 6-inch.....	1
3-inch in 6-inch.....	2
3-inch in 12-inch.....	1
4-inch in 6-inch.....	2
6-inch in 6-inch.....	2
6-inch in 12-inch.....	3
6-inch in 30-inch.....	1
8-inch in 12-inch.....	11
8-inch in 20-inch.....	1
12-inch in 20-inch.....	1
12-inch in 24-inch.....	1
12-inch in 30-inch.....	1
Jobs on which fittings were strapped.....	19
Mains charged.....	9
Complaints of foul or muddy water investigated.....	4
Blow-offs flushed, owing to complaints.....	11
Valves, reported out of order, examined.....	3
Doubtful cut-offs tested.....	8

(Foremen cutting off water for construction work or repairs sometimes report that valves controlling cut-off are not as shown on records. These cases are always investigated and corrections made if necessary.)

Service pipes were changed from old to new mains in the following blocks:

H street, between Third and Fifteenth streets NE.

Pennsylvania avenue, between Twenty-third and Twenty-fourth streets NE.

D street, between First and Second streets NE.

First street, between C and D streets NE.

G street, between North Capitol and First streets NE.

There were also 14 services changed at various locations. Installed 254 feet of 1½ galvanized-iron service at Twentieth and Girard streets NE., and 280 feet at Twelfth and Otis streets NE.

Repaired washstand at Brightwood Lodge.

Repaired fixtures twice in leakmen's shelter at the pumping station.

Located drain at Brightwood Reservoir.

Repaired leaks in divide wall at Brightwood Reservoir.

Erected six ¾-inch standpipes and installed angle valves for sprinkling slopes at Reno Reservoir.

Located 4 and 6 inch mains and ascertained controlling valves in the United States Capitol Grounds.

Reported leak in service lines investigated, 2.

Number of low-pressure complaints investigated, 12.

Installed valve-operating machine at New Jersey avenue and I street NW.

During the year the presence of algae in the reservoirs has caused several complaints from territories fed from these sources. The reservoirs are carefully watched and when an unusual growth of algae occurs the basins are drained and washed. If complaints are made the mains are thoroughly flushed in vicinity where the complaint occurs. Brightwood has been cleaned twice and Reno four times on account of this trouble.

Sample waters from Brightwood and Reno reservoirs are delivered semi-weekly to the chemist at the filtration plant.

50-foot scale maps corrected owing to new work.....	888
Index cards corrected owing to new work.....	690
Index cards completed.....	184
Alley squares located for card index.....	384
Alley-square cards completed.....	575
Projects made.....	6
Sketches made for drains to sewers.....	8
Jobs staked.....	2
Valves inspected to check normal position.....	12

(These are valves reported as not agreeing with index cards.)

This division assisted in taking fire-hydrant pressures for monthly records.

A card-index record is kept of all valves operated, stating position and condition at time of operation.

Repair work orders:

Received and indexed.....	2,483
Completed.....	2,452

This division makes all preliminary investigations for locations of horse fountains, etc., and has charge of all changes or extensions of dividing lines between the different services.

#### SUBDIVISION A 6.—*Laying mains, erecting fire hydrants, repairing leaks, etc.*

[Mr. S. H. HARDING, foreman in charge.]

All miscellaneous construction work, except of buildings and machinery, is done by this subdivision. For a statement of routine work accomplished attention is invited to Tables 3 and 4, appended hereto, where such work is described in detail. As will be noted, the total length of mains laid was about 27 miles.

The total number of leaks in water mains and appurtenances reported to this subdivision during the year was as follows:

	Trunk mains (16-inch and over).	Service mains (3 to 12 inch).	Service pipes.	Total.
Breaks.....	1	43	.....	44
Joints leaking.....	38	735	.....	773
Unclassified.....	.....	55	832	887
Total.....	39	833	832	1,704

In addition a large number of false reports were received and investigated. The leaks here referred to are such as showed on the surface of the ground and include none of those found by the regular underground survey carried on by Division F.

#### SUBDIVISION A 7.—*Building inspection and masonry construction.*

The work of this subdivision is under the direct supervision of Mr. P. B. Grant, inspector, whose report follows:

The force of men employed was variable, consisting of bricklayers, cement workers, masons, carpenters, stonecutters, watchmen, and from 3 to 18 laborers. The work includes the erection of all buildings for the department and all repair work necessary to keep the various properties in good, serviceable condition. The details of the work follow.

At the District pumping station the plastering on walls and ceilings was repaired, a brick pier built under loading platform in rear, coping along roadway in rear relaid, and a stone gutter placed. A chimney was built in the blacksmith shop, a door cut in the north wall, and cement steps built to lead to the wagon yard at north of shop. A brick and concrete fence wall with cement coping and suitable ball ornaments

was built around the wagon yard, and a cement walk laid at the entrance. At the east end of the stable the door and window openings were altered, 6 concrete window sills made, and a cement floor laid for the accommodation of extra horses. The gate at the south entrance to stable yard was walled up, alterations and repairs at east entrance made, and the joints in stone coping around the entire stable yard repaired. Material bins were built at the west property yard. The extension to the automobile shed was completed. An elevator and hoisting engine were erected and used and 77 cubic yards of concrete, 12 cubic yards of cement mortar, and 7,726 pounds of twisted steel placed. Suitable partitions were built, a furnace pit and steps made, a sewer laid to the shed, chimney built, cement floors laid, the front tooled to a pebble-faced finish, and a slag roof with necessary flashing, gutters, and downspouts placed.

At the Brightwood reservoir a cement floor was laid on the bottom of both gate houses, the roofs repaired, and the joints in the mortar cut out and calked with lead. The steps to the west gate house were redressed. A brick walk was laid at the watchman's lodge, and repairs made to the gables, cornice, coping, and pebble-dashing of the lodge. The tool house on line of Sixteenth street at the reservoir was torn down and the site cleaned up.

At the Reno reservoir, the face of the basin was redressed, the top of the wall around the reservoir patched and realigned. A new cement floor was laid in the bottom of the gate house. A cement walk was laid to outhouse, and the tower cleaned. The work on the new pump house is almost completed. Concrete footings were placed, and the brickwork finished. The foundations for the engines were laid and work is now being done for the roof sheathing.

At the water department farm, a concrete dam was built on the branch, and the spring house erected.

The stone was cut around a fire hydrant at corner of Seventh and F streets, NW., and reset after repairs to hydrant.

Brick and concrete vaults for valves were built at the following locations: Corner North Capital and G streets; corner Georgia avenue and Kenyon street, NW.; corner Seventh and G streets, NW.; corner North Capital and E streets; front of Union Station; corner Military road and Beach Drive; Grant Circle and one on Rittenhouse street, Chevy Chase; corner Military and Daniels roads.

Vaults were repaired at the following locations: Corner Ninth and F streets, NW.; on M street, west of Twenty-ninth, NW.; corner New Jersey avenue and L street, NW.; corner Massachusetts avenue and K street, NW. (2).

Drinking fountains were erected on north side Pennsylvania avenue between Thirteenth and Thirteenth-and-a-half streets, NW.; corner Seventh and K streets, NW.; corner Eighth street and Pennsylvania avenue, SE.

During the year, the laborers at the pumping station made 1,592 8-inch concrete rings for valve casings, 24 4-inch rings, and made and filled 808 valve-casing covers.

#### SUBDIVISION A 9.—*Miscellaneous drafting.*

This subdivision is in charge of Chief Draftsman F. W. Albert; the following is from his report:

Drawings and tracings made.....	859
Projects made.....	288
Foreman's plats recorded.....	521
Locations, no plats necessary.....	60
Cards for assessor.....	571
Files forwarded to the assessor.....	199
Communications written.....	490

The work of recording foreman's plats, which did not constitute a part of the miscellaneous drafting done during the fiscal year ending June 30, 1909, was assumed by this subdivision on July 22, 1909, and has continued to be a part of its work up to the present time.

In detail, the work comprising miscellaneous drafting grouped about the several heads mentioned above is as follows:

Drawings and tracings are made of all water main maps and of certain mechanical apparatus and their appurtenances which are used either in the shops, office, pumping station, reservoirs, lodges, or in the field. Drawings alone are made of the foreman's plats and are designed to show the work of laying water mains and erecting fire hydrants on each job as completed in the field. Upon the resignation of Mr. Kennelly, who formerly devoted his entire time to the construction of these plats, this work was divided and is now performed when necessary by three of the assistant draftsmen in this division. This change has made it possible for the division to keep well up with the work as completed in the field, and has proven more than satisfactory throughout

the department where reference to these records is made. Pencil sketches are made of all private-service connections and meter installations as soon as the foreman's plats for such work are completed. These are immediately forwarded to the water registrar for his information and action in order that proper meter accounts, charges, etc., may be made.

Six sections of the 300-foot scale map of the District of Columbia, begun in March, 1908, have been under construction almost continually from that date to the present time. However, an aggregate of about three months was lost in the fiscal year ending June 30, 1909, and practically the same amount of time was lost during the fiscal year ending June 30, 1910, through the employment of the draftsmen, whose particular duty is the construction of this map, upon special emergency work at various times and for longer or shorter periods. In spite of these interruptions three of the six maps comprising the set have been entirely completed, and are now ready for the use for which they were originally designed. A large map case for the special use of these 300-foot scale maps is under construction at the department shops at this time.

Upon the first of every month reports are obtained from all the divisions and subdivisions in this department, and a chart showing the organization of the distribution and revenue branches of the water department is kept posted and corrected to date. At the same time water pressures are taken by special parties upon 100 fire hydrants scattered throughout the distribution system. These are posted upon special cards and in a special book. The hydraulic heads are figured and form part of the special map drawn at that time, which shows, in addition, the water-service areas and trunk mains. Through this means the department is enabled to carefully watch the pressure and supply in all sections of the district, while the available head in the various service areas is determined at these times and places where pressures are taken.

The new series of 100-foot scale maps, begun in September of the last fiscal year, have continued under construction, a set showing Anacostia and Twining City having been completed. The work of replacing the present 100-foot scale county maps in the northwest section is now under way. Besides this work the other 50-foot scale water-main maps have all been corrected and checked, and the 100, 300, and 400 foot scale maps and tracings, both in our own and in the office of the water registrar, have been posted to date. Through the constant use of these map tracings it has been necessary to replace many which have become so worn as to be useless. Others have had to be repaired frequently. Eventually, two entirely new sets must be made for use in room 310 and in the water registrar's office, but it is the intention to delay this work if practicable until the new series of county maps has been completed, when the tracings of these maps will logically replace the old map tracings discarded.

Sets of blueprints of the 300-foot scale tracings have been made for the use of those needing them in the department. The value of these sets has been much appreciated by those having them in their possession. They enable the foreman in charge of construction work, the leak gangs, and all others holding these sets of blueprints, to effect cut-offs and the segregation of the distribution system with little or no difficulty, waste of time or energy.

The log begun in April, 1908, and designed to show graphically through its several elements the result attained at the pumping station, is kept continually posted to date by this division. At the end of the fiscal year 1909-10 this log demonstrated its great convenience by enabling anyone at a glance to compare the daily averages for the preceding year, which were charted by months and posted at the end of the year.

A chart showing the hourly consumption of the first high service for the month of April, 1910, and the mean temperature of the water for that month, was compiled with a view to determining if the change of the atmosphere affected in any way the consumption of the water for that month. The result obtained in that particular case seemed to indicate that the temperature had no effect on the consumption. This chart was primarily compiled for the benefit of Mr. McComb, formerly superintendent of sewers, now in charge of the sewage disposal system for the city of Habana, Cuba.

Upon investigation it was found that certain property which should have been assessed upon the extension of the water mains had not been. The work of making a complete investigation of the assessment of all unsubdivided property through which water mains had been laid since April, 1904, was assigned to this division and was finally concluded, showing that approximately \$10,000 had been overlooked in the assessment of property for water-main extension. Since that time, on the 6th of each month, this division has undertaken the work of ascertaining the subdivision of all parcel property in the District in the hope that in that way no land which may be assessed for water mains already existing is allowed to escape.

Along the same lines of the chart showing the organization of the distribution and revenue branches of the water department, this division has compiled another chart showing the present organization of the District of Columbia government. This chart

supersedes the one previously made in the fiscal year 1908-9, and was made necessary by the reorganization and reassignment of the duties given each of the commissioners. The purpose of this chart is the same as the previous one, to enable anyone to determine at a glance the immediate authorities in control of the several departments. Blueprints of this chart are given the other departments upon request.

It was found that old water-main records compiled in map form about fifteen years ago were becoming so torn and dilapidated as to be practically useless. The work of copying these records upon cloth was undertaken by this division, and the most dilapidated of the records have been transferred to the cloth. These have been checked and rechecked in order to determine conclusively that all information on the old records had been transferred to the new before the old records were destroyed.

Ten blueprints of No. 4 section 300-foot scale map were furnished the sewer department early in the year. These blueprints were designed to show the location of the Smith street washers in the business section of the city and were intended to facilitate the work of the sewer department in flushing sewers in that section.

A list of the land purchased by the water department was compiled by this division early in this fiscal year for the use of the superintendent in making special reports to the commissioners. Upon the completion of this list it was found that the department had purchased 906,127.55 square feet of land, valued at \$88,711.86.

Projects for the proposed extension of water mains are made from records contained in the several departments, and show adjacent property abutting proposed water mains, water, sewers, and gas mains, electric conduits, curbs, pavements, etc. They are made for all water-main extensions applied for, or upon recommendation by the health officer, chief of the fire department, engineer of highways, and similar officials that such extensions be made, and for all special extensions deemed desirable by this department and tending to the betterment of the service. The largest projects made were for mains in B street NE., from First to Eleventh streets; K street, NW., between Ninth and Twenty-second streets, and in the Conduit road west to the District line. All projects were made under miscellaneous drafting. Work upon projects is continuous and frequently requires the undivided attention of one assistant draftsman.

In recording foreman's plats it is necessary to make records upon all maps in the office. These plats show not only the mains themselves, but all connections, services, and valves, the addition of special parts or fixtures which are installed as new work, removed, lowered, or changed in any form, and as reported by any of the several field parties of the department.

Under the head of communications written may be included all reports upon projects and files passing through this office, as they pertain to the extension of water mains, applications for estimates for the installation of special private-service connections, changes in existing mains and work of similar character; writing of weekly reports; postal-card followers for all information concerning the location of mains and fire hydrants, pressures as given out over the telephone; and the compilation and writing of special reports of such character as are referred directly to this division for disposal.

The work of checking the daily reports of leak gangs with the water-main maps begun in 1908 has been continued to date, with fair returns to the department. While purely routine in character this continued work has gradually tended toward the perfection of our present water-main map records. Records of the streets and location of the water mains in the many older and longer settled parts of the city are either unknown or of a very doubtful character. Leaks on these mains reported, located, and entered upon leak gang reports frequently enable the department, through the posting of these records by this division, to ascertain the true extent and location of a main whose existence heretofore was either unknown or doubtful. The continuance of this feature of miscellaneous drafting must prove of decided value and benefit to the department.

Associated with this work of checking the leak-gang reports is the posting of the new water-main taps. These records are obtained from cards turned in at the water registrar's office by the tapper after the water mains have been tapped by him for new house connections or services. The cards show the size and location of all mains tapped, together with much other information. Many times the information obtained from these cards is of the same value as that obtained from the leak reports.

Part of the duty of this division is to furnish all officials or private individuals requesting same in person with verbal information upon any or all phases of the work of the department. The queries often necessitate lengthy research among the records, and cover many details of the work both past and present in and out of the office. While not difficult or exacting, this duty consumes much time and energy since requests for information are numerous and interfere with the performance of other duties.

Passing work to be done by the surface division is in a measure unproductive in returns to the department. Lists of jobs and locations of the work to be done by the surface division are sent to the department. These are forwarded to this division for reference. Those jobs where water-main work is necessary or in project are held, while the remainder are passed and returned to the surface division for execution. Upon the conclusion of the water-main work releases are sent out to the surface division and as far as this department is concerned the surface-division work proceeds. The object of this system is to make the cutting and replacing of new pavements for underground work unnecessary in the immediate future after such pavements have been laid.

Photographs taken by the department photographer showing water-department possessions, underground work, and various constructions are described, arranged, and filed in albums by this division throughout the year.

In pursuance with the commissioners' order of March 9, 1909, cards are sent to the assessor, showing the location and a brief description of all work of laying water mains in the District ordered by the commissioners, immediately upon the actual commencement of such work. A copy of the morning report made out by the foreman of the department is furnished this division, and from this the new jobs are noted, cards constructed and immediately sent forward to the assessor upon the commencement of each new piece of work.

The posting of the two work-in-progress maps begun in 1908 has been continued throughout the past fiscal year. These maps show, by means of pins with colored heads, paper flags, and little attached cards, what work is being done in the field, what work is ordered, and that which has more recently come up for consideration. They have proven of the greatest possible convenience because of the ease with which one is enabled to obtain the information these maps furnish.

Drawings of unusual interest, which have been assigned this division for execution, include a pumping station at Reno Reservoir, the arrangement of water mains under Rock Creek and Calvert street NW., the arrangement of water mains on bridge in Military road over Rock Creek, drawings of body for tappers' wagon, drawings showing the arrangement of meters and installations at First and K streets NE., and Twelfth street between E and F streets SW., drawings of platform and ladder for gatehouse at Brightwood Reservoir, and drawings showing the surface and subsurface construction around the District pumping station. The architectural drawings enable the division to become more familiar with building construction and with figuring out material and cost of such work.

Other than the foregoing much work of a miscellaneous character is performed by this division. This includes indexing records and maps, changing and correcting drawings and blueprints, indexing and correcting mechanical drawings, figuring and checking weight of cast-iron water pipe and special castings, changing names of streets on various books and maps of the department to conform to the new street nomenclature, etc.

At the present time the force employed to do miscellaneous drafting includes three draftsmen, one acting as chief draftsman, and four skilled laborers, who work as assistant draftsmen.

#### SUBDIVISION A 10.—*Telephone switchboard.*

A brief summary of the chief items of work done during the year follows: Recorded, 1,934 leaks, 886 fire hydrants out of service, 1,023 fire hydrants in service, 3,140 hauling orders, 2,555 reservoir elevations, 595 fire alarms, 365 daily reports of water consumption, 4,938 leakmen's reports, 4,195 cut-offs by the water registrar, 72 cut-offs by the pitometer division, 405 locations of new jobs, 14 water complaints, 1,095 weights and miles traveled by autotrucks, and 94,508 telephone connections made. Two thousand four hundred and sixty-six work orders were issued for repairs to street hydrants, fountains, etc. The telephone switchboard is connected by means of 4 trunk lines with the system of the Chesapeake and Potomac Telephone Company, by 1 line with fire-alarm headquarters, 1 with police headquarters, and 26 lines with the various divisions and branches of the department, reservoirs, etc.

Mr. H. C. Fowler, chief operator, is in charge of the work.

#### DIVISION B.—*Stables and transportation.*

This division, under Mr. G. A. von Dachenhausen, is charged with the care and maintenance of the water department stables and with all hauling and miscellaneous transportation, shoeing of horses, etc.

Following is a summary of the principal work accomplished:

Men employed daily in connection with the stables and transportation: Foreman, 1; blacksmith, 1; blacksmith's helper, 1; drivers, 31.

Maintenance of roads, furnished 3 laborers and watering cart.

The following have been furnished with transportation:

Four to 7 foremen with teams to haul material and move dirt; 1 4-horse truck and 2 double teams to haul pipe and fittings; leak division, 1 single team for five months; engineer division, 2 single teams for six months; foreman, 1 single team; time-keeper, 1 single team; pitometer division, 5 single teams; water registrar, 1 single team and one double team for six months; valve division, 3 single teams for six months and 1 double team; fire hydrant division, 2 single teams and 2 double teams; paver, 1 cart; miscellaneous hauling, furnished 2 single teams.

In addition to routine work the following was hauled during the year:

Cast-iron pipe and fittings:

30-inch.....	tons..	65
24-inch.....	do....	13
20-inch.....	do....	1,889
12-inch.....	do....	1,701
8-inch.....	do....	3,714
6-inch.....	do....	124
4-inch.....	do....	57
3-inch.....	do....	45
Fire hydrants.....	number..	60
Special pipe.....	tons..	2
T. C. pipe.....	lengths..	237
Valves.....	tons..	64
Fittings.....	do....	184½
Water meters.....	do....	14
Machinery.....	do....	11
Lead.....	do....	100
Freight.....	do....	27
Sand.....	cubic yards..	377½
Gravel.....	do....	265½
Soil.....	do....	78½
Portland cement.....	barrels..	877
Trees.....	number..	60
Shrubby.....	boxes..	3
General blacksmithing, wheelwrighting, etc.....	sets shoes..	930½

DIVISION C.—*Inspection of machinery, pipe, specials, etc., at place of manufacture.*

During the year two inspectors have been employed at Lynchburg, Va., and Burlington, N. J., on cast-iron pipe and special castings manufactured for this department by the Glamorgan Pipe and Foundry Company and the United States Cast Iron Pipe and Foundry Company. Four thousand four hundred and forty-six tons of pipe and 88 tons of specials were inspected.

DIVISION D.—*Revenue and inspection.*

For a statement of the work of this division attention is invited to the report of the water registrar, Mr. G. W. Wallace, appended hereto.

DIVISION E.—*Miscellaneous clerical.*

This division is charged with all work relating to records of contract material delivered, preparation of vouchers for contract and open-market purchases, transfer vouchers for work done by the department on deposit of cost, or for other departments on account; with transmission of all papers to their proper destinations; with keeping of all accounts relating to the employment of labor, expenditure of material, job costs, etc., and with making of requisitions for material as called for by other divisions, and the handling of all miscellaneous correspondence.

During the year 2,896 vouchers and 3,676 "files" were received and forwarded; 604 requisitions for material made; 332 transfer vouchers prepared; 1,018 letters and 36 postal cards mailed; 391 card records made; 1,009 work orders transmitted; 1,038 official letters forwarded; miscellaneous papers handled, 21,149; letters received and filed, 548; 776 pay rolls prepared, and 15,009 material slips checked, entered, and filed.

Mr. W. C. Small, clerk, has charge of this work.

DIVISION F.—*Pitometer surveys for the detection of waste.*

The work of this division is under the direction of Mr. Paul Lanham, from whose report the following is taken:

At the beginning of the fiscal year 1909-10 the first survey of the entire gravity service was about completed, but because of the extremely bad condition of that service, particularly the southwest and southeast sections, it was deemed advisable to make a resurvey of those portions. During the previous year the necessity for some change in the method of survey was repeatedly felt; accordingly, as the easily located trouble had all been eliminated throughout the gravity service, that territory was selected for a trial of a method of work designed to overcome all of the objections of the old system, notably the serious effect on pressures and supply caused by the simultaneous isolation of a number of small districts, the impracticability of arranging a recording system flexible enough to cover all cases arising under a system of surveys in which the same territories were seldom isolated the second time, the impossibility of obtaining important figures for comparison from year to year, and the extremely slow progress of the work. As the surveys are conducted under the new method, the water services are divided into a number of large permanent districts, and measurements are made of the supply into each for periods of seven days or more. The pitometers, under the care of the assistant pitometer operator, are placed on the trunk mains entering or leaving the territories and simultaneous records are run for the period stated. As this work, including the isolation of the districts, is assigned exclusively to one employee, the others are relieved of serious impediment to the detection of leaks within the districts, and as the boundaries of these districts follow as nearly as possible the neutral points of the distribution system, the danger to the isolated territory in case of fire is minimized, and serious slumps in pressure are obviated.

The whole city will be traversed at least once a year by the pitometer measurements, and while it will be impossible to make the detailed night surveys over the entire city within that period, it will be possible to keep a close surveillance on all sections, working those districts first which show the worst condition. A close study of all sections is made possible by this method, as all important data are compiled and filed by districts, and all changes in consumption due to increased population, changes of season and character of buildings, increased use of meters, etc., can be determined from the records of the surveys. These figures are of the greatest value to water survey work, and this division has been seriously handicapped by the failure to keep such data in the past. The detailed surveys within the districts are made in a manner somewhat similar to the previous method, viz, small test districts are isolated and the controlling valve of each section of main is operated, the drop in rate of flow at the pitometer being noted. When a flow is detected in any block, it is immediately investigated, service pipes being examined with the aquaphone and cut off if leakage or waste is suspected. All flows between curb and premises, or within the premises, are thus eliminated, and, as a second test is then made of the square, the amount and cause of the flows are accurately determined. The principal points of difference between this and the former method are that the aquaphone inspection is now made at a time when the quantity of water flowing is known, and not several days after the night test, as formerly, and the curb stops are operated at night, when the flow is steady, making for greater accuracy in the results and causing less inconvenience to householders. In case the territory is metered, the meters are examined at night, and the rate of flow passing through them is compared to the rate entering the block as determined by the pitometer. The test districts are seldom isolated for more than twenty-four hours at a time, the usual method being to close a district between 11 and 11.30 p. m. on the night of the tests and open it by 5 a. m. the next morning. The pitometers for these tests are placed on the smallest mains available, thus giving workable deflections, in many cases, without the use of an open fire hydrant. It will be noticed that the use of small mains for the tests is still practiced, and that no extensive subdivisions are made by pitometers placed on the trunk mains. To this fact is due, in a large measure, the uniform success of the water survey work in Washington. In addition to the advantages stated above, a net saving of \$1,440 per annum was accomplished by the return to the pitometer company of two rented pitometers, the use of which is now unnecessary.

Routine surveys made during the year embraced three large pitometer districts, B, C, and E, as shown on the accompanying charts (charts not included). Miscellaneous surveys were made in a number of places where the waste of water was suspected, and a number of special investigations were conducted for various purposes.

In district B the mean daily consumption from August 20 to 26, inclusive, was 3,372,800 gallons, with a minimum night rate of 2,458,800 gallons, or 73 per cent of the mean daily rate. The per capita consumption was 258 gallons daily, computed



from resident population of 13,068. In this district there was also a floating population, mostly unmetered, of 8,553. The total number of buildings was 2,819, of which only 67 were metered, including schoolhouses, engine houses, District of Columbia morgue and fire boat, which get free water. The unmetered buildings include nine federal institutions, three public schools, and harbor master's offices, receiving free water. Night tests within the district resulted in the detection of flows totaling 2,183,000 gallons per day, including the flow into federal buildings and fountains. Of this amount 503,000 gallons (28,300 through meters) were due to leaking fixtures or careless waste within the buildings; 204,300 gallons to broken services; 81,000 gallons to defective calked joints; 500 gallons to leaking fire hydrants; 20,700 gallons to horse fountains; 3,600 gallons to sewer flush basins; 200,000 gallons to night consumption in Potomac Park; and 1,157,500 gallons to use within federal buildings. The discrepancy between the total of these flows and the minimum night rate as shown on the pitometer records is probably due to fluctuation in the night consumption within the period covered by the tests, or may be due to leakage from the 20-inch main in B street, which was not tested.

In District C the mean daily consumption from May 18 to 24, inclusive, was 3,637,800 gallons, with a minimum night rate of 3,097,800 gallons, or 85 per cent of the mean daily rate. The per capita consumption was 167 gallons per day, computed from a resident population of 21,840. In this district there was a floating population of 4,578, 60 per cent of which was metered. Night tests within the district resulted in the detection of flows totaling 2,571,500 gallons per day, including night consumption within federal buildings and sewage pumping station. The discrepancy between this total and the minimum night rate as shown on the pitometer records was due either to a fluctuation in the night consumption within the period covered by the tests, or to leakage from trunk mains which had not been tested. Of the 2,571,500 gallons detected, 1,151,500 gallons were due to careless waste or leaking fixtures within the houses (only 195,300 gallons being through meters); 865,500 gallons to leaking service pipes; 90,100 gallons to defective calked joints; 4,100 gallons to leaking fire hydrants; 8,000 gallons to a defective public hydrant; 35,000 gallons to a defective valve; 38,900 gallons to horse fountains; 2,600 gallons to sewer flush basins; and 383,000 gallons to use within federal and municipal buildings.

Referring to the heavy waste of water within premises as shown above, at least 75 per cent was due to the houses on Four-and-a-half street southwest. These were placed on metered supply on the recommendation of this office, and future tests will undoubtedly show a great improvement in that section.

In District E, the mean daily consumption, from September 13 to 19, inclusive, was 7,638,000 gallons, with a minimum night rate of 6,062,400 gallons, or 79 per cent of the mean daily rate. The per capita consumption was 351 gallons daily, computed from resident population of 21,741. A heavy floating population (13,644, about one-third metered) was partly responsible for the heavy per capita consumption in this territory. Night tests resulted in the detection of flows totaling 3,678,800 gallons per day, including night consumption in federal buildings and fountains. The discrepancy, between this total and minimum rate shown on the pitometer records, is large, and although a part of it may be accounted for by changes in the rate of flow while the tests were in progress, the difference is so great as to call for further investigation. In this district there are a number of large trunk mains which were not tested, and the figures above indicate that serious leakage is taking place from them. Of the 3,678,800 gallons shown on the subdivision tests, 1,582,300 gallons per day were due to leaking fixtures and careless waste within the houses (only 300,300 gallons of this passing through meters), 1,070,200 gallons to leaking service pipes, 173,200 gallons to defective calked joints, 300 gallons to leaking fire hydrants, 40,200 gallons to horse fountains, 19,000 gallons to sewer flush basins, and 411,400 gallons to night consumption in federal buildings and fountains.

Miscellaneous and special work during the year embraced scattered tests in the first high service, including a night test of Anacostia, the inspection of a number of squares in the gravity service east of District C, inspection of Schott's alley in square 725, inspection of First street between B and C streets NE., a partial survey of the second high service, examination of water consumption in the U. S. Soldiers' Home, measurements of water velocity through trunk main in Military road, examination of flow and pressures in Takoma Park, test of two motor-driven centrifugal pumps at the Washington Navy-Yard, and measurements of the water consumption in several federal buildings to complete work started in last fiscal year.

In Anacostia the average night rate of consumption in the early part of January was 350,000 per day. This figure seemed abnormal, and an inspection, together with pitometer subdivision tests, was made, resulting in the detection of about 65,000 gallons per day in underground leakage, the balance of the flow being due principally to

running yard fixtures. This territory is still unmetered and constitutes a favorable field for their use.

Schotts alley was found to have a heavy night waste due to running yard fixtures, and at the recommendation of this office meters were placed on all service pipes.

The examination of service pipes in First street between B and C streets NE. was made to determine the extent of damage to underground work caused by settlement adjacent to the new terminal tunnel. A number of defective service pipes were found.

The survey of the second high service was undertaken because of the high night rate of consumption prevailing in spite of the fact that all service pipes in that territory had been metered. This work was not completed because of the cold weather, but, in the 502 squares examined, flows were found in 57, totaling 438,450 gallons per day. Of this, 212,290 gallons were due to the underground leakage, 20,540 gallons to sewer flush basins, 21,560 gallons to horse fountains, and 183,860 gallons to metered flows inside of premises. Measurements of the water consumption within Bryant street pumping station showed a night flow of 60,000 gallons, 30,000 gallons being due to a 4-inch meter on test and 30,000 gallons to cooling tanks on the heating system. These tests were made during October, November, and December, the mean daily consumption during those months being about 4,000,000 gallons. In connection with the work of this territory, a small district was isolated and a comparison was made between the consumption as shown by the pitometer and by the water meters. Pitometer records gave the consumption in the district at 155,000 gallons daily. The meters registered a total of 99,420 gallons in the same period. The discrepancy, 55,580 gallons, was partially accounted for by 34,450 gallons, leaving a balance of 21,130. To account for this, there were in the district 16 unmetered houses in addition to a street hydrant and a 1-inch connection for construction purposes at Howard University.

The survey of the water consumption in the Soldiers' Home was made at the request of the authorities of that place. With few exceptions the use of water was found normal.

Pitometer and pressure records were taken in Military road east of Rock Creek Ford road to determine the effect of the new 20-inch trunk line connecting the 20-inch Reno main at Sixth and Trumbull streets to the 12-inch main at Grant Circle.

A periodic slump in pressures in the Reno service was found to be caused by an automatic hydraulic ejector operated in Takoma Park by the sewer department.

Two centrifugal pumps in the electrical power house at the navy-yard were tested with the pitometer for the information of the electrical engineer of that place.

Permanent connections were installed and records taken to determine the consumption of the War Department annex (Ford's Theater), Weather Bureau, Naval Observatory, Senate Office, Bureau of Standards, Commerce and Labor, and bathing beach.

At this point an interesting comparison may be made between metered and unmetered territory, District C being taken as typical of the latter. The average night flow per square in the metered territory was found to be 873 gallons per day, against 10,500 gallons in the unmetered territory. In the metered territory 48 per cent of this flow was due to underground leakage, 5 per cent to sewer flush basins, 5 per cent to horse fountains, and 42 per cent to flows within the premises; while in the unmetered territory 42.6 per cent was due to leakage, 0.1 per cent to sewer flush basins, 1.7 per cent to horse fountains, and 55.6 per cent to flows within the premises.

The total underground leakage found and stopped during the year amounted to 6,364,190 gallons per day. As in previous years, most of this waste, 4,903,860 gallons, was due to defective service pipes. The sources and quantity of leakage chargeable to each were as follows: Iron services, 2,438,000 gallons; lead services, 1,201,878; joints on mains, 1,034,227; wiped joints on services, 710,145; broken mains, 332,000; abandoned services, 305,075; defective or loose couplings on services, 118,690; valves, 89,100; curb cocks, 84,825, and taps blown out, 50,250 gallons. The largest leak found during the year was a broken main wasting 302,000 gallons daily. This break was caused by the settlement of an old brick sewer. The water main passed through the masonry work and of course was broken when the settlement occurred, the sewer serving to carry off the water.

Twenty-one thousand six hundred and forty-two houses were inspected, leaking fixtures being found in 3,305, or 15 per cent. Six thousand six hundred and twenty-five metered service pipes were examined and 22,569 curb stopcock boxes were cleaned to make possible their inspection and operation at night. Four hundred and ten forty-eight-hour notices were served on premises for underground leaks. It was necessary to cut off only 43 for failure to make repairs.

Thirty-five permanent connection vaults were installed and 39 connections were repaired, the old 8-inch casings being removed in a number of instances and replaced by valve casings. One connection was abandoned, 4 adjusted to grade, and 2 removed

and installed in new locations. At the close of the fiscal year there were 263 permanent connection vaults in service. (See chart, not included.) The majority of these are without the 1½-inch standpipes.

Six large 200-foot scale maps, embracing most of the gravity service territory and the northeast and southeast sections of the first high-service territory, were made during the year, an extra draftsman being employed during the months of August, September, and October to assist the regular draftsman on this work.

Clerical work, embracing the posting of card records, correspondence, etc., kept the time of the two clerks of this office fully occupied, and at the closing of the fiscal year that work had increased to such an extent that an additional clerk is necessary that the records of the field work may be properly prepared for filing. The records of this division, at the close of the year, embraced approximately 50,000 cards.

Work done by the photographer was as follows:

Plates exposed and developed.....	382
Photographic prints made.....	633
Photographic copies made.....	22
Pitometer records developed.....	356
Blueprints made.....	1,749

A number of experiments in color photography were conducted. They were entirely successful and the photographer is now prepared to execute work of this character.

The total expenditures of this division for the year amounted to \$28,625.95, as follows:

Maintenance:	
Per diem labor.....	\$17,975.28
Material, cuts, transportation, etc.....	8,249.54
	<hr/> 26,224.82
Betterments:	
Per diem labor.....	\$1,279.72
Material, etc.....	1,121.41
	<hr/> 2,401.13
	<hr/> 28,625.95

*Pitometer districts, fiscal year 1909-10.*

	District and date of measurement.		
	B.—Aug. 20-26, 1909.	C.—May 18-24, 1910.	E.—Sept. 13-19, 1909.
Mean daily supply.....gallons.....	3,372,800	3,637,800	7,638,000
Minimum night rate.....gallons per day.....	2,458,800	3,097,800	6,062,400
Ratio of minimum night rate to mean daily supply.....per cent.....	73	85	79
Population:			
Resident—			
Metered.....	398	547	4,281
Unmetered.....	12,670	21,293	17,460
Total.....	13,068	21,840	21,741
Floating—			
Metered.....	1,217	3,044	4,069
Unmetered.....	7,336	1,534	9,575
Total.....	8,553	4,578	13,644
Per capita consumption (computed from resident population).....	258	167	351
Buildings:			
Dwellings—			
Metered.....	4	9	427
Unmetered.....	2,546	4,211	3,826
Factories—			
Metered.....	11	14	21
Unmetered.....	5	9	12
Hotels and apartments—			
Metered.....	5	10	51
Unmetered.....	23	153	43
Stables and garages—			
Metered.....	5	4	22
Unmetered.....	5	17	41

*Pitometer districts, fiscal year 1909-10—Continued.*

	District and date of measurement.		
	B.—Aug. 20-26, 1909.	C.—May 18-24, 1910.	E.—Sept. 13-19, 1910.
<b>Buildings—Continued.</b>			
Barrooms—			
Metered.....	21	33	36
Unmetered.....	3	13	11
Public schools—			
Metered.....	3	8	6
Unmetered.....	3	3	3
Police stations, metered.....		1	
Engine houses—			
Metered.....	2		1
Unmetered.....		1	1
Federal buildings, unmetered.....	9	4	6
Miscellaneous—			
Metered.....	16	12	68
Unmetered.....	158	372	381
Total metered.....	67	91	632
Total unmetered.....	2,752	4,783	4,321
Grand total.....	2,819	4,874	4,953
Night flow detected by subdivision..... gallons per day.....	2,183,000	2,571,500	3,678,800
Due to inside fixtures—			
Metered.....	28,300	195,300	300,300
Unmetered.....	474,700	956,200	1,282,000
Due to underground leakage—			
Services.....	204,300	865,500	1,070,200
Joints on mains.....	81,000	90,100	173,200
Fire hydrants.....	500	4,100	300
Public hydrants.....		8,000	
Defective valves.....		35,000	
Due to horse fountains.....	20,700	38,900	40,200
Due to flush basins.....	3,600	2,600	19,000
Due to federal buildings and fountains.....	1,357,500	283,000	411,400
Sewage pumping station.....		100,000	

## PITOMETER SURVEYS.

*Results for fiscal year 1909-10.*

	Number.	Waste per day.
		<i>Gallons.</i>
Service pipes inspected.....	34,267	
Houses inspected.....	21,642	
Houses with leaking fixtures.....	3,305	
Abandoned services and taps leaking.....	11	305,075
Iron services broken.....	204	2,438,000
Lead services broken.....	87	1,201,878
Wiped joints broken.....	74	710,145
Couplings on services leaking.....	18	118,600
Curb stopcocks leaking.....	30	84,825
Taps blown out.....	3	50,250
Joints on mains leaking.....	92	1,034,227
Mains broken.....	2	332,000
Valves leaking.....	11	89,100
Waste found and prevented.....		6,364,190

DIVISION G.—*Tests and experiments.*

The work of this division is under the direction of Mr. H. D. Yates, from whose report the following is taken:

The work of this division consists in testing and correcting the measuring apparatus used by the department; in making calorimetric tests of coal delivered at the pumping station; in making accuracy tests of all water meters to be used in the District of Columbia; in making special tests of boilers and machinery as called for; in figuring the daily pumpage, consumption, station duty, etc., and in keeping necessary records.

During the year the following special tests were made: Duty trials of all pumping engines at the station; an efficiency test of our portable, steam-driven centrifugal pump, after locating and correcting an adjustment of the engine that prevented high-suction lifts; accuracy tests of hot-water meters, and a determination of the amount of leakage from the north basin, Brightwood Reservoir, by weir measurement.

Miscellaneous tests made include the following: Valves tested for leaks,  $\frac{1}{2}$  to 36 inch sizes, 1,251; corporation cocks, tests for leaks,  $\frac{3}{4}$  to 1 $\frac{1}{2}$  inch sizes, 4,925; curb cocks, tests for leaks,  $\frac{3}{4}$  to 1 $\frac{1}{2}$  inch sizes, 5,366; pressure gauges tested and corrected, 115. Also made calibrations of thermometers, fuel calorimeter, pitometer slip indicators, steam indicators, CO<sub>2</sub> recorder, etc.

Calorimetric tests of all coal delivered at the station were made with the Carpenter fuel calorimeter. In selecting a sample for test a small quantity of the coal was taken from the front and rear ends of each wagon load as received. These were combined for monthly periods, and the required sample obtained by the process of quartering down.

The tests for accuracy and durability of water meters, begun July 3, 1908, to secure information for the guidance of the department in the selection of meters for local use, were continued throughout the year. The points being considered by this investigation are: (1) The relative accuracy of small-sized meters under the same conditions of pressure and water delivery with widely varying rates of flow; (2) sensitiveness; (3) loss of head; (4) permanency of registration; (5) capability of meters to be adjusted for wear, and cost of such adjustment. Tabular and graphical records of these tests have been kept practically up-to-date at all times.

Since this division was temporarily placed in charge of the waste cleaning room, about three and one-half months ago, there have been 250 gallons of oil removed from the material passed by the waste machine and rendered fit for use in oil cups and about 70 pounds of cotton waste cleaned per day.

The station duty for the year was 98,501,144 foot-pounds per 100 pounds of coal burned. This is an increase of 3 per cent over the duty obtained during the preceding year and represents an annual saving of 112.7 gross tons of coal. The highest monthly duty (=104.0) was obtained in October and the lowest (=94.7) in December. Comparisons of monthly duties show that the highest (=100.4) for the fiscal year 1908-9, which was also the high record for the station, was exceeded in July, August, September, and October.

The accompanying tabular statements show the sizes and makes of all private and municipal water meters tested during the year; the results of analyses of the coal delivered at the pumping station; the results of duty trials of all pumping engines at the station under every-day working conditions; the pumping record for the year, and the operative cost of pumping.

The normal force employed consisted of 2 skilled laborers, 1 plumber, and 1 laborer.

*Analyses of "Jenner" bituminous coal delivered during the fiscal year ended June 30, 1910, at the District pumping station, Washington, D. C.*

Month.	Dry coal.	
	British thermal units.	Ash.
1909.		
July.....	14,711	<i>Per cent.</i> 6.12
August.....	14,581	7.51
September.....	14,660	7.19
October.....	14,698	7.02
November.....	14,466	7.55
December.....	14,712	7.16
1910.		
January.....	14,585	8.39
February.....	14,598	7.65
March.....	14,788	6.06
April.....	14,672	7.27
May.....	14,453	7.82
June.....	14,658	7.20
Average.....	14,632	7.25

*Tests of private and municipal water meters (excluding meters on endurance test) during the fiscal year ended June 30, 1910.*

Meter.	Size.									Total.
	$\frac{1}{8}$ -inch.	$\frac{1}{4}$ -inch.	1-inch.	1 $\frac{1}{2}$ -inch.	1 $\frac{1}{2}$ -inch.	2-inch.	3-inch.	4-inch.	6-inch.	
American.....	16	5	6		1					28
Badger.....	1									1
Crown.....	1	2	7		5	7	1	3	1	27
Empire.....	4									4
Enarc.....		3	4		5	2				14
Eureka.....							1			1
Gem.....						6	3			9
Hersey.....	573	56	15		60	13	5	2		724
Hersey detector.....							4			4
Keystone.....	3		1			1	2			7
King.....	14	1								15
Lambert.....	1,029	42	21		29	10	3	2		1,127
Nash.....	23	136	151		55	39	4	7	1	416
Niagara.....		5	2	5	9	4				25
Pittsburg disk.....	6	18	10	2		4	2			42
Standard.....	1	2	3		5					11
Thomson.....		45	45		28	19	4			141
Trident.....	204	18	20		32	6	10	2		292
Trident compound.....							3	2		5
Union.....		9	3		1	5		2		20
Worthington.....	49		3		3	11				66
Total.....	1,924	342	291	7	224	127	42	20	2	2,979

*Cost of operating pumping engines at the District pumping station during the year ended June 30, 1910.*

Operating expenses:

Coal (includes coal for shops, excludes heating system).....	\$12,191.62
Salaries of steam engineers, firemen, oilers, etc.....	\$17,555.12
Supplies, oil, waste, packing, etc.....	\$1,864.67
Repairs to engines, pumps, and boilers, including grates.....	\$1,438.24

Total cost of operation.....	\$33,049.65
Total pumpage for the year, without allowance for slip..... gallons..	9,085,377.000
Greatest amount pumped in one day (June 30)..... do.....	30,612,800
Least amount pumped in one day (Oct. 16)..... do.....	19,931,000
Average per day..... do.....	24,891,400
Average dynamic head against pumps..... feet..	108.03
Duty= $\frac{\text{Gallons pumped} \times 8.34 \times 100 \times \text{dynamic head}}{\text{Total fuel consumed.}}$ .....	98,501,144
Cost of fuel, pumping 1,000,000 gallons 1 foot high..... cents..	1.24
Total operative cost of pumping 1,000,000 gallons 1 foot high..... do.....	3.37
Total operative cost per 1,000 gallons pumped..... cent..	.364
Cost of coal per ton.....	\$3.29

NOTES.

The above items of supplies and repairs were furnished by the clerical division.

The pumpage is figured from plunger displacement, without allowance for slip. The aggregate slip of all pumps during the year, based on pitometer determinations, is 3.51 per cent of the total displacement.

The average dynamic head is figured from the total work done by pumping engines and generators.

The fuel consumed is the total coal burned excluding the heating system. The cost of heating—351,330 pounds of coal, at \$3.29 per ton—is \$516.01.

DATA AND RESULTS OF TRIALS.  
*Pumping engines at District pumping station, Washington, D. C., under everyday conditions in operation.*

	Engine.					
	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
GENERAL DATA.						
Date of test.....	Sept. 28, 1909.....	Sept. 30, 1909.....	Sept. 23, 1909.....	Oct. 7, 1909.....	Oct. 5, 1909.....	Oct. 1, 1909.....
Duration.....	6 hours.....	6 hours.....	6 hours.....	6 hours.....	6 hours.....	6 hours.....
Name of builder.....	Holly Manufacturing Co., Buffalo, N. Y.	Nordberg Manufacturing Co., Milwaukee, Wis.	Barr Engine Co., Philadelphia, Pa.	Allis-Chalmers Co., Milwaukee, Wis.	Allis-Chalmers Co., Milwaukee, Wis.	Allis-Chalmers Co., Milwaukee, Wis.
Type of engine.....	Vertical triple-expansion single-acting.	Horizontal triple-expansion double-acting.	Vertical triple-expansion single-acting.	Vertical triple-expansion double-acting.	Vertical triple-expansion double-acting.	Vertical triple-expansion single-acting.
Capacity in 24 hours.....	million gallons.....	5	12	20	20	30
Diameter of steam cylinders.....	inches.....	16	20	20	20	24
Diameter of plungers.....	do.....	30	35	38	38	46
Diameter of feed pump.....	do.....	45	52	50	56	68
Number of plungers.....	do.....	10	23.75	24.5	24.5	41.25
Stroke of all plungers and feed pump.....	inches.....	None.	1.875	1.875	1.875	2
		3	3	3	3	3
		30	30	42	42	60
MEAN PRESSURES.						
Discharge pressure, by gauge.....	pounds.....	170	64.1	64.23	36.02	36.12
Suction pressure, by gauge.....	do.....	5.05	6.17	6.49	3.35	6.44
Net water pressure, by gauge.....	do.....	164.95	57.74	57.74	32.67	23.68
Steam pressure at throttle, by gauge.....	do.....	150.96	148.7	148.7	149.2	149.8
Steam pressure in first receiver, by gauge.....	do.....	22	6.2	16.2	22.3	27
Steam pressure in second receiver, by gauge.....	do.....	-4.8	-6.5	-2.7	-2.5	-1.6
Steam pressure in H. P. jacket.....	do.....	Initial.	Initial.	Initial.	Initial.	Initial.
Steam pressure in I. P. jacket, by gauge.....	pounds.....	29.3	32	35	36.6	(a)
Steam pressure in L. P. jacket, by gauge.....	do.....	5.5	27.4	1	.4	(b)
Vacuum, by mercurial manometer.....	inches.....	28.2	29.97	28.3	28.5	28.3
Barometer.....	do.....	30.05	29.94	30.17	30.43	30.03
MEAN TEMPERATURES.						
Outer air.....	°F.....	63	83	72	67	63
Engine room.....	°F.....	75	85	81	76	77
Circulating water entering surface condenser.....	°F.....	71	69	65	67	68
Discharge from air pump.....	°F.....	78	74	74	76	70

<sup>a</sup> First receiver.

<sup>b</sup> Second receiver.

*Pumping engines at District pumping station, Washington, D. C., under everyday conditions in operation—Continued.*

Engine.						
	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
STEAM.						
Quality of steam at throttle.....per cent.	98.76	98.5	98.63	98.65	98.61	98.58
Total water from surface condenser.....pounds.	8,035	15,831	25,263	19,254	18,468.5	17,260.5
Total water from jackets and receivers.....do.	1,291	1,469	621	2,822.5	2,906	2,866
Jacket water to total used.....per cent.	13.8	8.1	2.4	12.8	13.6	14.2
Total dry steam furnished to engine.....pounds.	9,210.4	16,972.5	25,529.4	21,778.5	21,017.2	19,840.7
PUMP DATA AND RESULTS.						
Total revolutions.....	8,775	16,152	10,468	10,934	11,065	5,417
Average revolutions per minute.....	27.43	44.87	29.07	30.37	30.73	15.05
Displacement of plungers per revolution.....gallons.	44.99	77.29	207.12	495.84	496.84	1,041.35
Total pumpage by plunger displacement.....do.	444,276	1,248,388	2,168,132	5,421,515	5,486,470	5,640,993
Mean net head pumped against.....pounds.	164.95	57.93	57.74	32.67	30.72	29.68
Total work by plunger displacement.....foot-pounds.	1,410,704,029	1,392,142,999	2,409,867,877	3,409,577,230	3,244,478,899	3,222,924,940
Slip, by pitometer measurement.....per cent.	4.1	5.2	4.8	5	4	1.7
Duty per 1,000 pounds of dry steam.....millions of foot-pounds.	153.2	81.1	94.4	156.6	154.4	162.4

NOTES.—Duties are figured from plunger displacement, without allowance for slip.

Pumping engines Nos. 5, 6, and 7 supply the first high service, No. 4 the second high service, and No. 2 the third high service mains; No. 3 engine being an auxiliary machine on the second high service.

Engine No. 3 is charged with work by its auxiliary air pump (= 16,400,268 foot-pounds).

Engine No. 2 has been operated under a lower net water pressure and higher piston speed since April 1, when the Reno service main was reinforced by a 20-inch main. A test under the changed conditions gave a duty of 149.7 millions of foot-pounds.



*Labor chargeable to operation of pumping engines and boilers.*

1 chief steam engineer, one-half salary for 7 months.....	\$510. 44
1 machinist, total salary for 5 months.....	542. 93

## PER ANNUM.

3 steam engineers, at \$1,100.....	3, 300. 00
3 assistant steam engineers, at \$875.....	2, 625. 00
3 firemen, at \$875.....	2, 625. 00
4 oilers, at \$610.....	2, 440. 00

## PER DIEM.

3 cleaners at \$1.75 per year of 365 days.....	1, 916. 25
5 laborers <sup>a</sup> at \$1.75 per year of 365 days.....	2, 677. 50
2 boiler cleaners, <sup>b</sup> 1 steam fitter, and 1 helper.....	918. 00

Total..... 17, 555. 12

*Cost of operating pumping engines at the District pumping station during the year ended June 30, 1910.*

## OPERATING EXPENSES.

## Salaries:

1 machinist.....	\$1, 053. 37
3 steam engineers.....	3, 300. 00
3 assistant steam engineers.....	2, 625. 00
4 oilers.....	2, 440. 00
3 cleaners.....	1, 916. 25
5 laborers.....	2, 677. 50
3 firemen.....	2, 625. 00
2 boiler cleaners, 1 steam fitter, and 1 helper.....	918. 00
	<hr/> \$17, 555. 12

Coal:	
8,086,212 pounds bituminous coal at \$3.29 per ton, in bins..	11, 876. 62
100 tons bituminous coal at \$3.15 per ton, in bins.....	315. 00
	<hr/> 12, 191. 62

## Supplies:

Cylinder oil, engine oil, crank case oil, grease, waste, packing, washers, lard oil, and graphite.....	1, 864. 67
Repairs to pumps, engines, boilers, including grates:	
Per diem labor.....	788. 37
Material expended.....	649. 87
	<hr/> 1, 438. 24

Total cost of operation..... 33, 049. 65

DIVISION H.—*Pumping station and shops.*

This division has charge of all pumping incident to the operation of the distribution system, care of pumping stations and machinery, and all miscellaneous repair work needed in the department. It is under the direction of Mr. James T. Fink, chief steam engineer, from whose report the following is taken:

Water pumped, figured from plunger displacement:	
First high service.....	gallons.. 7, 021, 039, 000
Second high service.....	do.... 1, 615, 778, 000
Third high service.....	do.... 448, 560, 000
Total.....	do.... 9, 085, 377, 000
Coal burned.....	tons.. 3, 710
Cylinder oil used.....	gallons.. 495. 218
Engine oil used.....	do.... 884. 125
Grease used.....	pounds.. 648. 5
Waste used.....	do.... 1, 145. 5

<sup>a</sup>The 5 laborers are employed as follows: 2 cleaning engine-room floor, 2 cleaning windows, galleries, etc., and 1 handling coal.

<sup>b</sup>These men are not in constant attendance. An allowance of time and a half for one man is made at \$2 per day per year of 306 days.

The regular force employed for the operation of the engines and boilers, cleaning machinery, etc., is as follows:

Steam engineers.....	3
Assistant steam engineers.....	3
Firemen.....	3
Oilers.....	4
Cleaners.....	4
Laborers.....	5

For the fourth high-service system the water is pumped from the reservoir at Fort Reno (which is supplied by the third high-service pump) to an elevated tank. There are two triplex, single-acting plunger pumps, operated by gas engines of 10 and 6 horsepower, respectively. This machinery being operated daily by the watchman in charge of the reservoir, and, owing to the increased consumption of water on this service, it has been necessary to have a man on duty for night service throughout the entire year.

Gas consumed during year, 534,350 cubic feet.

A new pumping plant for the fourth high-service system is being constructed, and will be ready for service during the coming year.

Under the head of shopwork are included the following divisions and the number of men ordinarily required in each.

Machinists.....	6
Blacksmith.....	1
Carpenters.....	2
Painters.....	2
Steam fitter.....	1
Laborers.....	6

The work accomplished during the year is as follows:

All necessary repairs for this station, gas engines and pumps at Reno reservoir tower station, automobiles, repair parts for fire plugs, valves, and street hydrants, including all tools used on the work of laying water mains and connections, such as picks, chisels, breakers, calking tools, yarning irons, keys, wrenches, pipe bands, arch irons, etc.

Repaired the following valves:

2-inch.....	1
3-inch.....	20
4-inch.....	81
6-inch.....	47
8-inch.....	12
10-inch.....	1
12-inch.....	3
16-inch.....	4
24-inch.....	2
6-inch, three-way.....	4
6-inch, four-way.....	6
Total.....	181

Repaired 719 water meters of various sizes and makes; made 41 three-way 6-inch valves and 87 four-way 6 and 8 inch bell valves; put hot-water heating plant in shops in west yard; examined two valves for interchangeability of every shipment of valves received, and made gauges for valves; made gauges for high-pressure and low-pressure fire plugs; repaired leather seats on 22 valves for fire plugs; cut threads on 68 curb cocks; made 178 operating screws and nuts for valves and fire plugs; made 25 main valves and stems for McClelland fire plugs, 25 stems for foot valves in street hydrants; cut 500 pipe nipples for storekeeper; made 71 keys for opening curb, and meter box covers; drilled and tapped 119 Buffalo box tops for number plates; made 62 waste valves for fire plugs; designed and fitted up parts and erected part of the machinery for new Reno pumping station; repaired lead-melting furnaces and tar-heater burners; drilled iron-pipe bands; made experimental recorder for pitometer division; made gear train for testing taximeters; sharpened horse clippers and Smith cutters; made cooling coils for drinking fountain; fitted up casings for fire plugs; repaired overflow pipes for fountains; made swedging tools and fountain bolts; repaired radiators in station; fitted up battery of 4-inch meters for Railroad Terminal Company, and other miscellaneous work too numerous to mention. Details are given in weekly reports on file.

In the blacksmith shop the following work has been done during the year: Made 183 chisels and sharpened 3,552 chisels and 9,881 picks, welded 688 new ends on

picks; made 40 steel bars, drills, and points, sharpened 115 steel bars and drills; made 50 new stakes and repaired 115 stakes; made 5 new valve-operating keys and 3 new curb-cock keys; repaired 126 keys for valves and curb cocks; made handles for street hydrants; welded collars on fire-plug valve stems; made tappets, casing-cover litters, grille for wall at stable yard, angle irons, pipe bands, fountain bolts, forgings for various work; dressed turning and boring tools for shop use; made eyebolts and wedges for engines and pumps at Reno reservoir; repaired wrenches, tunneling bars, and other tools used on repair work; made thumb latches for doors and gates; made irons for automobile bodies; repaired wheelbarrows, and lead pots and ladles, calking tools, yarning irons, etc.

The carpenters have made patterns for meter-box cover, truck wheel, saddle flange, operating screws for valves, frame and cover for ice chambers at drinking fountains, fire-plug casing, etc.; boxed patterns and other parts for shipment; fitted up storeroom in basement; made coupon file and card cases of various kinds; made repairs to doors, locks, sash, etc., at this station; filed saws for storekeeper; made ladders; base for sample case; forms, doors, sash, and other woodwork for cement sheds; put new floor in gatehouse at Reno reservoir; made forms for brick and concrete work; window frames and sash, screens, stalls, lockers, sheds, gates, etc., for stable; made tool boxes, wagon and automobile bodies, hotbed sash and frames; repaired bridge at Woodridge; pitometer and watch boxes, miscellaneous wagon work, and lodge at Brightwood reservoir; put bulkheads in coal bunkers; made tripod derrick, portable closets for use on ditch work; put up supports for pipe on bridge over Rock Creek on Military road; made doors, sash, frames, and other mill-work for Reno pump house; fitted up shops for meter repairs, electrician and painters' use.

The painters have painted and finished wagons, buggies, automobiles; varnished and finished card and coupon cases; trimmed wagon tops, and made cushions for seats; cleaned and painted walls of gatehouses and painted woodwork of lodge at Brightwood reservoir; painted storeroom and bins in basement; cleaned and painted walls in office rooms at pumping station; painted joists and flooring in gatehouses, woodwork and fence of lodge at Reno reservoir; painted woodwork on automobile sheds; stained and painted screens, sash, stalls, sheds, and other work in stable and yards; painted water coolers, barrels, pitometer operating and watch boxes, tool boxes and chests, indicator posts, signs for reservoir, bridge at Woodridge; glazed and painted hotbed sash and greenhouse; mixed paint for fire plugs, and miscellaneous work around the station.

Under the heading of "Care of station, lights, etc.," are included the electrician, janitor, and helpers, the following schedule showing the number of men ordinarily employed each day:

Electrician.....	1
Helper.....	1
Janitor.....	1
Laborers.....	8
Window cleaner <sup>a</sup> .....	1

The electrician and his helper have taken care of engines and generators, switchboards, motors, wires for lights, telephones, call bells, etc.; have operated crane, economizer scrapers, conveyor for coal and ash; put up alarm gauges at reservoirs; examined cables and oiled elevators; tested and recharged batteries for automobiles, pitometer division, call bells, engine stops, gas engines, etc.; made terminal connections for automobiles; fitted up oil tanks with glass gauge connections; repaired electric hoists, steel chutes under dumb blocks for coal bunkers; put new gas bag on engine at Reno, connected telephones in room No. 40; changed lights and wires in stable; changed tablet board and put up conduit and lights in sheds in west yard; put up auxiliary bell in stable; repaired switches, fixtures, extension cords, telephones, blueprinting machine, fan motors, galvanized iron pumps, oil cans, etc.

The janitor and his force have been engaged in cleaning throughout the building.

Once more I wish to extend my thanks to the employees of the department, and especially to the heads of the various divisions and subdivisions for the excellent work accomplished.

Very respectfully, your obedient servant,

W. A. McFARLAND,  
Superintendent Water Department.

Capt. E. M. MARKHAM,  
Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner District of Columbia.

<sup>a</sup> On Sundays 1 window cleaner is employed.

TABLE I.—*Statement of cash account of the water department for the year ended June 30, 1910, as stated by the auditor, District of Columbia.*

July 1, 1909, balances:

Cash in Treasury of United States.....	\$73, 859. 95	
Cash in hands of disbursing officer, District of Columbia.....	9, 818. 61	
		\$83, 678. 56

Receipts:

Water rents.....	509, 769. 23	
Water main assessments—		
Principal.....	74, 246. 71	
Interest.....	2, 658. 44	
Taps and stopcocks.....	11, 794. 78	
Sale of old material.....	1, 715. 20	
		600, 184. 36

Cash repayments:

Salaries, 1910.....	34. 18	
General expenses—		
1910.....	1. 50	
1909.....	2. 50	
High service—		
1910.....	2, 235. 53	
1909.....	. 18	
		2, 273. 89

Cash transfers—repayments:

Salaries—		
1910.....	537. 02	
1909.....	72. 19	
High service, 1910.....	23, 615. 48	
		24, 224. 69
		<u>710, 361. 50</u>

Expenditures:

Appropriation, 1910—		
Salaries.....	78, 112. 11	
Contingent expenses.....	3, 388. 13	
General expenses.....	31, 581. 53	
Use of bicycles.....	236. 12	
High service and meters.....	479, 039. 41	
Refund.....	1, 013. 88	
		593, 371. 18
Appropriation, 1909—		
Salaries.....	3, 315. 18	
Contingent expenses.....	144. 94	
General expenses.....	3, 412. 39	
		6, 872. 51

Reimbursement of United States and District of Columbia revenues on account of water meters.....	20, 000. 00
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June 30, 1910, balances:

Cash in Treasury of United States.....	78, 369. 46	
Cash in hands of disbursing officer, District of Columbia.....	10, 497. 23	
Cash in hands of collector of taxes, District of Columbia.....	1, 251. 12	
		90, 117. 81
		<u>710, 361. 50</u>

TABLE II.—Statement of the operating expenses in detail of the water department for the year ended June 30, 1910.

Heads of expenditures.	Salaries and per diem labor.	Material expended, cuts to improved pavements, transportation, and items charged direct.	Total ex-penditures.	Charged to the general account of—					Credit for hauling charged to the work.
				New work.	Operating.	Repairs.	Replac-ment of old work.	Repayment to United States Treas-ury, account of meters.	
Superintendence.	\$5,956.21	\$729.26	\$6,685.47	\$2,465.60	\$2,356.22	\$1,863.65			
Engineering.	12,497.63	692.27	13,190.20	4,339.66	8,850.54				
Care of property.	8,191.21	320.21	8,511.42		8,511.42				
Care and repair of valves.	10,512.63	4,849.37	15,362.30		11,084.67	4,277.63			
Reservoirs.	5,948.38	6,345.76	11,894.14	6,797.26	4,784.00	312.88			
Public hydrants and fountains erected.	856.24	961.93	1,818.17	1,818.17					
Maintenance and repair of fire hydrants, street hydrants, and fountains.	9,790.89	6,403.88	16,194.77		5,666.11	10,528.66			
Water mains laid.	52,808.85	161,703.53	214,512.38	214,512.38					
Leak service.	14,290.42	4,614.82	18,905.24		6,301.72	12,603.52			
Department telephone system.	3,024.12	14.93	3,039.05		3,039.05				
Water department stables and hauling account.	28,379.13	14.93	39,321.10		11,130.10	8,646.46	\$2,017.21		\$37,577.09
Inspection of pipe and fittings at foundry.	2,662.25	11,141.97	2,662.25	2,662.25					
Office of the water registrar.	47,973.88	708.08	48,742.56		48,742.56				
Repairs to services.	7,114.17	2,000.60	9,114.77			9,114.77			
Installation of new meters.	6,557.65	18,542.92	25,100.57	25,100.57					
Tapping water mains.	2,599.32	8,313.64	8,313.64	8,313.64					
Laying new services.	2,158.37	165.62	2,323.99	2,323.99					
Office of superintendent of water department.	11,357.05	587.02	11,944.67		11,944.67				
Pitometer division (detection of leaks).	19,255.00	9,370.95	28,625.95	2,401.13	26,224.82				
Tests and experiments.	5,347.61	289.05	5,636.66		5,636.66				
Shop work.	10,010.70	4,062.50	14,073.20	11,220.70		2,852.50			
Care of pumping station and grounds.	12,212.13	2,590.38	14,802.51		14,006.97	195.54			
Operating pumping engines.	20,797.66	14,706.16	35,503.82		34,065.56	1,438.26			
Deposit and railroad work (repaid to department).	10,801.97	20,145.11	30,947.08	30,947.08					
New buildings.	7,465.64	5,729.58	13,195.22	13,195.22					
Replacing fire hydrants, public hydrants, foun-tains, valves, etc., lowering water mains, and adjusting casings and boxes.	2,780.90	7,725.14	10,506.04	10,506.04					
Third installment, payment to United States Treasury, account of meters.		20,000.00	20,000.00	20,000.00				\$20,000.00	
Third installment, payment account Allis 30,000-gallon engine.		20,066.25	20,066.25	20,066.25	20,066.25				
Miscellaneous expenditures, freight, rent of tele-phones, advertising, telegrams, etc.		784.00	784.00	784.00	624.16				



TABLE III.—Summary of the distribution system, including mains laid by the United States, the District of Columbia, and on account of deposit work.

	In service June 30, 1909.	Laid dur- ing year ending June 30, 1910.	Abandoned during year ending June 30, 1910.	In service June 30, 1910.
7½-inch diameter.....linear feet.....	600			600
4½-inch diameter.....do.....	44,311			44,311
4-inch diameter.....do.....	23			23
3½-inch diameter.....do.....	58,944			58,944
3-inch diameter.....do.....	48,852	116	115	48,853
2½-inch diameter.....do.....	21,346			21,346
2-inch diameter.....do.....	47,537	15,601	16	63,122
1½-inch diameter.....do.....	2,580	25		2,605
1½-inch diameter.....do.....	262,301	21,329	706	282,915
10-inch diameter.....do.....	9,026	7	7	9,026
Total trunk lines.....do.....	495,520	37,069	844	531,745
8-inch diameter.....do.....	311,158	92,159	439	402,878
6-inch diameter.....do.....	1,469,471	6,253	7,844	1,467,880
4-inch diameter.....do.....	133,638	3,676	695	142,619
3-inch diameter.....do.....	73,555	2,457	50	75,992
2½-inch diameter.....do.....	242			242
2-inch diameter.....do.....	4,669		80	4,589
1½-inch diameter.....do.....	3,870	406		4,276
1½-inch diameter.....do.....	2,001	113		2,114
Grand total.....do.....	2,500,154	142,133	9,952	2,632,335
Stop valves.....	6,349	793	231	6,911
Fire hydrants.....	2,542	212	38	2,716
Public hydrants.....	241	10	22	229
Public sanitary fountains.....	1	3		4
Public fountains (horse).....	127	6		133
Public wells.....	41			41
Water mains lowered.....linear feet.....				1,381

TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910.

	Size.	Length.	Labor.	Material.	Total.
	Inches.	Feet.			
Girard street ne., east from Twentieth street.....	1½	246	\$59.06	\$50.04	\$109.10
Otis street ne., east from Twelfth street.....	1½	160	71.25	43.09	114.34
Alley, square 981.....	3	65.44	30.12	102.61	132.73
Square 1273, Georgetown.....	3	232.93	68.25	62.67	130.92
Alley, square 3116.....	3	95.90	40.06	112.42	152.48
Alley, square 23.....	3	129.65	45.76	117.28	163.04
Alley, square 557.....	3	124.92	59.49	125.09	184.58
Alley, square 217.....	3	178.68	85.74	199.51	285.25
Alley, square 1027.....	3	125.24	43.25	105.35	148.60
Alley, square 502.....	3	65.83	88.43	86.83	175.26
Alley, square 1207.....	3	250.60	100.88	171.99	272.87
Decatur street ne., west from First street.....	4	132.37	37.88	105.64	143.52
Childs court, square 1030.....	4	372.24	108.87	144.51	253.38
Alley, square 1000.....	4	208.41	111.81	140.61	252.42
Alley, square 491.....	4	217.32	62.63	201.10	263.73
Seventh street nw., between Longfellow street and Shepherd road nw.; Shepherd road nw., be- tween Seventh and Madison streets; Madison street nw., between Shepherd road and Eighth street.....	4 8	721.99 21.05	213.88	307.13	521.01
Alley, square 195.....	4	187.94	15.50	146.72	162.22
Alley, square 2672.....	6 4	3.65 680.25	163.07	250.76	413.83
Florida avenue ne., east from Sixth street; M street ne., between Sixth street and Florida ave- nue.....	6	473.02	188.32	341.70	530.02
Ninth street nw., between New York avenue and K street.....	6	62.68	39.13	97.89	137.02
P street nw., between Tenth and Eleventh streets; Q street nw., between Eighth and Ninth streets; Q street nw., between Tenth and Eleventh streets.....	6 8	9.75 692.20	295.50	703.70	1,059.20
Second street nw., between V and Bryant streets.....	6 8	153.32 494.14	248.49	819.19	1,067.68

TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910—Continued.

	Size.	Length.	Labor.	Material.	Total.
	<i>Inches.</i>	<i>Feet.</i>			
Morse street ne., between West Virginia avenue and Montello avenue.....	8	58.03	\$16.75	\$49.83	\$66.58
Capitol avenue ne., between Providence and Fenwick streets; Fenwick street ne., between Capitol avenue and Gallaudet street; Providence street ne., between Capitol avenue and Gallaudet street; Central avenue ne., between Capitol avenue and Gallaudet street; Corcoran street ne., between Mount Olivet road and Gallaudet street; Mount Olivet road ne., between Capitol avenue and Corcoran street.....	6 8	9.55 2,856.29	1,032.43	3,941.38	4,973.81
Gallaudet street ne., east from Corcoran street; Kendall street ne., south from Gallaudet street...	8	202.71	56.19	165.99	222.18
East Capitol street, east and west from intersection of Seventeenth street.....	4 8	3.10 338.43	172.82	215.37	388.19
Twenty-second street se., between Prout street and Railroad avenue; Railroad avenue se., west from Twenty-second street.....	4 8	3.10 899.19	195.44	688.98	884.42
Lamont street nw., between Sixth street and Georgia avenue; Sixth street nw., between Lamont and Keeler streets.....	6 8	11.54 867.71	351.06	790.95	1,142.01
Otis place nw., between Fourteenth street and Holmead place.....	6 8	12.50 530.09	165.12	506.62	671.74
Connecticut avenue nw., between Wyoming and Kalorama avenues.....	8	347.35	160.99	332.49	493.48
Thirty-eighth street nw., north and south from Macomb street.....	4 8	3.10 219.89	107.00	236.64	343.64
Fort Stanton road se., south from Galen street.....	8	161.06	58.00	196.66	254.66
Buchanan street nw., between Georgia avenue and Arkansas avenue; Allison street nw., between Georgia avenue and Thirteenth street; Varnum street nw., between Iowa and Georgia avenues; Iowa avenue nw., between Buchanan and Varnum streets; Thirteenth street nw., between Allison and Buchanan streets.....	8 4 8 4 8	4,566.91 4.55 511.85 7.57 421.97	980.19	3,656.50	4,636.69
Kalorama road nw., between Connecticut avenue and Twenty-third street.....	4 8	4.55 511.85	231.12	556.69	787.81
Farragut street nw., between Sixteenth street and Piney Branch road.....	4 8	7.57 421.97	132.13	363.96	496.09
Grant road nw., between Wisconsin avenue and Nourse road.....	6 8 20	17.21 1,593.31 4.28	594.20	1,411.35	2,005.55
Butternut street nw., east from Piney Branch road.....	8	324.93	118.87	229.04	347.91
Michigan avenue nw., east from North Capitol street.....	6 8	4.17 1,100.78	229.49	820.79	1,050.28
Carrollburg place sw., between M and N streets.....	6 8	6.08 658.91	215.56	569.34	784.90
L street nw., between Ninth and Tenth streets; Kent place nw., between Ninth and Tenth streets.....	6 8	13.72 636.03	263.57	600.56	864.13
Yuma street nw., between Forty-second street and Wisconsin avenue.....	4 8	3.10 896.13	351.00	707.85	1,058.85
Q street nw., east from Twenty-eighth street.....	4 8	3.10 254.59	118.68	210.16	328.84
Sixteenth street se., south from G street.....	4 8	3.10 208.46	78.50	202.91	281.41
E street ne., between Twelfth and Thirteenth streets.....	6 8	6.50 354.50	132.12	295.89	428.01
Kentucky avenue se., south from C street.....	4 6 8	3.10 8.70 282.98	116.00	239.82	355.82
Woodley road nw., west from Connecticut avenue.....	8	309.16	139.75	385.90	525.65
Eleventh street nw., between U and V streets.....	4 8	3.10 103.75	48.45	73.61	122.06
Seventeenth street ne., between Rosedale and Kreamer streets.....	8	192.48	74.75	216.46	291.21
Seventh street nw., between New Hampshire avenue and Taylor street.....	4 8	3.10 262.35	80.75	272.05	352.80
Rhode Island avenue ne., south from Irving street.....	4 8	3.10 663.61	159.87	573.24	733.11
Ninth street ne., between B street and Massachusetts avenue.....	6 8	6.07 305.01	134.01	445.38	579.39
Fifth street nw., south from Kennedy street.....	8	135.90	39.49	120.71	160.20
Rock Creek Church road nw., north from New Hampshire avenue.....	4 8	4.72 128.20	41.19	95.16	136.35
Thirty-ninth street nw., north from McKinley street.....	8	232.27	67.32	266.07	333.39
New Hampshire avenue nw., north from Randolph street.....	4 8	3.26 7.05	88.50	246.74	335.24
North Capitol street, between Girard street and Michigan avenue; Michigan avenue east from North Capitol street.....	8 4 8	170.85 3.10 319.05	84.00	223.92	307.92



TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910—Continued.

	Size.	Length.	Labor.	Material.	Total.
	<i>Inches.</i>	<i>Feet.</i>			
Fourteenth street nw., south from Spring road.....	4 6 8	3.10 10.10 443.79	\$169.19	\$436.51	\$605.70
Sixteenth street ne., north from A street; A street ne., east from Sixteenth street.....	4 8	3.82 407.53	191.50	351.09	542.59
Thirty-ninth street nw., between McKinley and Livingston streets.....	4 8	3.10 805.66	305.06	805.49	*1,110.55
Florida avenue nw., between Eighth and Ninth streets.....	6 8	18.69 267.81	144.69	308.72	453.41
Georgia avenue nw., north of Shepherd street; Kansas avenue nw., between Shepherd and Randolph streets; Kansas avenue nw., north from Shepherd street.....	4 8	9.28 888.34	243.69	783.44	1,027.13
Callan street ne., west from Seventh street.....	6 8	7.30 283.94	131.81	316.56	448.37
North Capitol street, north from Quincy place.....	8	93.62	57.63	99.03	156.66
River road nw., west from Wisconsin avenue.....	4 8	3.35 340.25	145.13	331.71	476.84
Forty-first street nw., north from Fessenden street.....	8	232.00	59.00	287.81	346.81
Eleventh street nw., south from Monroe street.....	8	194.35	108.50	250.79	359.29
Central avenue ne., south from Brentwood road.....	4 8	3.10 207.88	225.45	243.60	469.05
Twelfth street se., north from B street.....	6 8	3.54 360.03	119.82	241.18	361.00
Eleventh street nw., north from Lamont street.....	8	208.75	84.75	156.09	240.84
Chesapeake street nw., east from River road; River road nw. between Chesapeake and Forty-second streets.....	4 8	4.53 410.93	136.88	356.12	493.00
Mount Pleasant street nw., north from Irving street.....	4 6 8	3.10 8.40 241.21	94.87	250.15	345.02
Channing street nw., east from Twenty-second street; Twenty-second street nw., between Bryant and Douglas streets; Douglas street nw., between Twenty-second street and Queen's Chapel road; Queen's Chapel road nw., north from Douglas street; Park avenue nw., west from Queen's Chapel road.....	4 8	11.37 1,669.84	644.61	1,655.77	2,300.38
Wisconsin avenue nw., south from Davenport street. Brandywine street nw., between Wisconsin avenue and River road; River road nw., between Wisconsin avenue and Chesapeake street; Wisconsin avenue nw., north from Brandywine street.....	8	218.62	82.96	205.24	288.20
Prospect street ne., east from Lincoln road.....	6 8	4.73 537.92	197.75	582.39	780.14
Park road nw., east from Mount Pleasant street.....	6 8	7.95 179.97	83.68	189.65	273.33
Eleventh street nw., south from Girard street.....	8	203.47	78.63	190.47	269.10
Belmont street nw., between Thirteenth and Fourteenth streets; Fourteenth street nw., between Belmont street east of Fourteenth street and Belmont street west of Fourteenth street.....	4 8	1.53 888.83	435.27	996.41	1,431.68
River road nw., between Chesapeake and Davenport streets.....	8	219.43	75.38	157.82	233.20
Kenyon street nw., west from Eleventh street.....	6 8	6.17 255.58	106.50	259.13	365.63
Prospect avenue ne., between Lincoln road and Second street.....	4 8	3.10 398.45	113.32	340.68	454.00
New Hampshire avenue nw., between Newton and Otis places.....	8	236.65	62.00	190.28	252.28
T street se., west from Seventeenth street.....	8	285.50	69.81	191.96	261.77
Fourteenth street nw., north from Webster street; Buchanan street nw., between Fourteenth street and Piney Branch road; Allison street nw., west from Fourteenth street.....	8	2,134.35	572.24	1,961.60	2,533.84
Fifth street ne., between F and G streets.....	8	164.85	65.44	110.25	175.69
Washington circle nw., between Pennsylvania avenue and New Hampshire avenue; Twenty-third street nw., north from Washington circle.....	6 8	3.40 468.57	253.34	499.93	753.27
Eleventh street nw., north from Euclid street.....	8	181.08	105.69	130.02	235.71
Twenty-sixth street nw., north from M street.....	6 8	4.85 157.55	63.62	146.53	210.15
Center street nw., south from Meridian street.....	8	153.07	62.62	150.32	212.94
Blair road nw., north of Elder street to District of Columbia line.....	8	1,330.73	426.45	1,064.41	1,490.86
Third street ne., between I and Parker streets.....	4 8	3.10 77.91	44.13	75.23	119.36
Wisconsin avenue nw., south from Davenport street.....	8	239.13	102.25	213.10	315.35
Georgia avenue nw., north of Randolph street.....	6 8	6.14 107.23	57.51	131.83	189.34

TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910—Continued.

	Size.	Length.	Labor.	Material.	Total.
	<i>Inches.</i>	<i>Feet.</i>			
Rittenhouse street nw., between Third and Fourth streets; Third street nw., between Quackenbos and Rittenhouse streets; Quackenbos street nw., east from Third street.....	8	1,635.18	\$404.51	\$1,421.97	\$1,826.48
New Hampshire avenue nw., north from Otis place..	8	8.10	70.75	322.12	392.87
Meridian street nw., west from Fourteenth street; Fourteenth street nw., north and south from Meridian street.....	6	204.49			
	8	5.88			
	8	773.31	270.89	669.30	940.19
Tunlaw road nw., between Thirty-seventh street and Snyder's Lane.....	12	5.22			
	4	7.10			
N street ne., west from Fourth street and Florida avenue.....	8	1,150.10	466.50	963.17	1,429.67
Livingston street nw., west from Connecticut avenue.....	8	259.46	79.69	247.15	326.84
	6	7.60			
	8	330.36	101.94	286.65	388.59
Rock Creek Church road nw., west from Fifth street.	8	449.55	127.06	353.44	480.50
B street ne., east from Sixteenth street.....	8	238.28	93.13	249.71	342.84
K street ne., between Seventh and Eighth streets..	6	11.00			
	8	355.76	144.00	278.61	422.61
Kalorama road nw., east from Ashmead place; Ashmead place nw., north from Connecticut avenue..	8	430.50	176.62	391.01	567.63
Kalorama road nw., east and west from Twenty-third street.....	8	384.54	121.75	367.13	488.88
M street nw., between Twenty-second street and New Hampshire avenue.....	6	9.36			
	8	277.68	112.86	265.20	378.06
North Capitol street ne., between Franklin and Girard streets.....	8	286.30	147.19	273.93	421.12
Twelfth street nw., between Clifton and Euclid streets.....	6	3.00			
	8	504.76	225.63	484.73	710.36
Perry place nw., east from Fourteenth street.....	8	171.50	72.06	232.84	304.90
Seventh street nw., between Columbia road and Fuller street; Messmore street nw., south from Columbia road.....	8	139.94	79.50	99.87	179.37
Holmead place nw., between Otis place and Spring road.....	6	3.00			
	8	539.69	204.50	452.69	657.19
Bryant street nw., east from Second street.....	4	4.33			
	8	70.88	60.50	61.30	121.80
Jefferson street nw., west from Illinois avenue.....	8	174.01	70.13	252.06	322.19
Mount Pleasant street nw., between Irving and Kenyon streets.....	8	165.40	66.88	154.88	221.76
Randolph street nw., east from Georgia avenue.....	8	137.18	79.00	156.00	235.00
Pennsylvania avenue se., west from L'Enfant circle.	8	276.70	83.19	183.66	266.85
Rock Creek Church road nw., between Georgia avenue and Warder street.....	8	878.46	401.06	670.20	1,071.26
Cedar street, west from Carroll street, Takoma Park, D. C.....	8	161.67	73.88	109.59	183.47
Kennedy street nw., between Ninth street and Illinois avenue.....	8	488.82	168.12	448.90	617.02
Oakdale place nw., between Fourth and Fifth streets.....	6	20.13			
	8	219.10	109.00	232.03	341.03
Kendall street ne., between Capitol avenue and Galaudet street.....	6	7.80			
	8	711.55	310.75	657.67	968.42
Quincy street nw., east from Eighth street.....	6	4.63			
	8	323.23	146.25	259.02	405.27
Forty-first street nw., south of Garrison street.....	8	62.25	33.00	57.01	90.01
Fourteenth street nw., north and south from Shepherd street.....	8	520.08	156.31	443.27	599.58
	12	11.60			
Fourteenth street nw., south from Webster street..	4	3.10			
	8	197.64	60.62	148.04	208.66
Upshur street nw., between New Hampshire and Illinois avenues.....	8	398.93	120.07	286.57	406.64
Eight street nw., between New Hampshire avenue and Randolph street.....	8	189.89	77.49	124.32	201.81
Eighth street ne., north from K street.....	8	168.80	59.13	178.53	237.66
Fifth street nw., south from Cedar street.....	6	7.10			
	8	334.95	95.81	246.34	342.15
Ninth street nw., between Taylor and Upshur streets	8	441.64	163.63	416.67	580.30
Twenty-sixth street ne., between Hamlin and Irving streets; Irving street ne., between Twenty-sixth street and South Dakota avenue.....	8	756.36	236.25	660.09	896.34
Eighteenth street nw., between Kenyon and Kilbourne streets.....	8	295.27	96.69	260.99	357.68
Thirtieth street nw., between Livingston and Legation streets; Legation street nw., west of Thirtieth street.....	8	690.15	142.43	575.85	718.28
Carlton avenue ne., west from Central avenue.....	8	683.20	186.62	503.93	690.55

TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910—Continued.

	Size.	Length.	Labor.	Material.	Total.
Fourteenth street nw., from Jefferson street to south of Farragut street; Farragut street nw., between Thirteenth and Fourteenth streets; Gallatin street nw., between Georgia avenue and Piney Branch road; Thirteenth street nw., between Farragut and Hamilton streets; Hamilton street nw., between Fourteenth street and Piney Branch road; Ingraham street nw., between Colorado avenue and Fourteenth street.....	Inches. 8 12	Feet. 6,260.59 909.99	\$1,821.00	\$5,943.85	\$7,764.85
Park place se., east of Twenty-third street.....	8	256.73	65.50	201.74	267.24
Sixteenth street ne., between Brentwood road and Hamlin street.....	8	244.22	137.69	266.23	403.92
Shannon place se., west from Talbert street.....	8	321.32	84.43	348.40	432.83
Fifth street ne., north of I street.....	8	314.10	93.37	292.66	386.03
Blagden avenue nw., west from Sixteenth street.....	8	544.58	187.56	477.83	665.39
Georgia avenue nw., north from Rock Creek Ford road.....	8	125.48	49.37	165.72	215.09
Thirty-ninth street nw., between Legation and Keokuk streets.....	8	316.65	94.00	216.87	310.87
Twenty-ninth street nw., south from R street.....	6 8	13.83 359.01	116.38	575.91	692.29
Morse street ne., west from West Virginia avenue.....	8	101.93	41.50	122.71	164.21
Massachusetts avenue nw., at intersection of Decatur street.....	8	128.04	60.24	196.42	256.66
Western avenue nw., between Chevy Chase circle and Rittenhouse street; Rittenhouse street nw., between Western avenue and Thirty-third street; Thirty-third street nw., between Rittenhouse street and Pinehurst circle; Tennyson street nw., west from Thirty-second street.....	4 6 8 12	41.67 15.48 3,433.62 3,222.86	2,135.93	6,561.03	8,696.96
Park place se., between Twenty-third street and Twenty-fourth place.....	8	55.08	12.50	52.76	65.26
Girard street ne., between North Capitol street and Glenwood Cemetery; Franklin street ne., between North Capitol street and Glenwood Cemetery.....	8	1,453.15	358.25	1,195.56	1,553.81
Lawrence street ne., east from Twenty-second street.....	8	114.07	37.38	115.21	152.59
Twenty-sixth street nw., north from M street.....	8	120.26	42.25	92.75	135.00
D street ne., west from Tennessee avenue.....	8	287.98	113.25	298.30	411.55
Rhode Island avenue ne., east from South Dakota avenue.....	8 12	313.19 9.16	242.62	300.33	542.95
North Capitol street, between Franklin and Evarts streets ne.....	8	174.79	71.75	187.34	259.09
Fairmont street nw., east from Eleventh street.....	8	200.44	80.44	113.72	194.16
P street sw., between First and Second streets.....	6 8	13.05 379.55	116.81	330.49	447.30
Thirty-fourth street nw., north from Newark street.....	8	287.47	89.31	215.23	304.54
Brentwood road ne., between Central avenue and Monroe street.....	8	193.68	64.69	206.27	270.96
Thirty-seventh street nw., south from Snyder's lane.....	8	462.46	161.81	384.60	546.41
C street sw., between Second and Canal streets.....	4 8	11.34 272.33	113.50	209.00	322.50
Naylor road se., between Minnesota avenue and Q street.....	6 8	2.55 305.65	108.81	289.12	397.93
Thirteenth street ne., between Maryland avenue and G street.....	6 8	12.37 275.26	100.87	312.18	413.05
Ellicott place nw., west from De Russey street; De Russey street nw., between Dennison and Ellicott places.....	8	562.16	216.26	561.66	777.92
Seventeenth street nw., south from Kilbourne place; Kilbourne place nw., between Seventeenth and Mount Pleasant streets.....	8	358.86	129.06	281.11	410.17
Florida avenue ne., between Fifth and Sixth streets.....	8	258.16	84.19	271.37	355.56
New Hampshire avenue nw., north of Otis place.....	8	187.40	83.25	198.02	281.27
New Hampshire avenue nw., south from Shepherd street.....	8	303.78	109.76	213.49	323.25
Alhmarle street nw., east from Grant road.....	8	2,867.09	744.75	2,145.46	2,890.21
Seventeenth street se., north from E street.....	8	293.14	100.69	307.39	408.08
Warder street nw., between Rock Creek Church road and Quebec place.....	8	238.55	108.80	272.04	380.84
S street nw., between Second and Third streets.....	6 8	15.12 420.69	103.82	423.83	527.65
Rhode Island avenue nw., between Second and Third streets.....	6 8	14.48 407.81	126.87	379.19	506.06
Lexington place ne., between Sixth and Seventh streets.....	6 8	13.93 663.12	186.32	640.23	826.55
Rosedale street ne., east from Sixteenth street.....	6 8	11.01 101.53	61.07	117.54	178.61

TABLE IV.—Statement showing cost of water mains laid during the year ended June 30, 1910—Continued.

	Size.	Length.	Labor.	Material.	Total.
	<i>Inches.</i>	<i>Feet.</i>			
North Capitol street, between V and Bryant streets nw.; North Capitol street, between Channing and Everts streets ne.....	6 8 12	7.70 2,285.06 3.25	\$712.50	\$1,904.94	\$2,617.44
Shepherd street nw., between Georgia avenue and Fourteenth street.....	4 8 12	26.38 25.02 2,100.55			
Chesapeake street nw., west from De Russey street..	8 12	25.11 644.92			
Davenport street nw., from Belt road to Wisconsin avenue; Wisconsin avenue nw., north from Davenport street.....	6 8 12	17.58 86.38 2,650.97	1,256.36	3,809.21	5,065.57
Elder street nw., between Georgia avenue and Seventh street; in Seventh street to unnamed street; in unnamed street to Blair road.....	12	1,692.65			
Bladensburg road ne., between Twenty-eighth street and National Training School for Boys.....	8 12	5.20 1,360.47			
From Bladensburg road ne. to National Training School for boys.....	6 12	20.34 1,601.08	449.26	1,894.00	2,343.26
"B" road nw., between Fourteenth street and Colorado avenue; Fourteenth street nw., between "B" road and Madison street.....	8 12	112.01 596.04			
B street nw., between Fourteenth and Seventeenth streets; Seventeenth street nw., north and south from B street.....	4 6 8 10 12	13.04 9.52 574.06 7.25 2,130.88	859.31	3,147.70	4,007.01
Hamlin street ne., east from Rhode Island avenue; Rhode Island avenue ne., between Franklin and Hamlin streets.....	4 8 12	26.74 235.95 1,367.95			
Belt road nw., from Ellicott place to Forty-first street; Forty-first street nw., from Livingston street to Western avenue; Western avenue nw., from Forty-first street to Patterson street.....	6 8 16 20	109.57 213.48 25.22 6,207.99	3,374.32	14,155.44	17,529.76
Sixth street nw., from Trumbull street to Fairmont street; Fairmont street nw., from Sixth street to Georgia avenue; Georgia avenue nw., from Fairmont street to New Hampshire avenue; New Hampshire avenue nw., from Georgia avenue to Grant circle.....	3 6 8 12 20	19.85 118.38 42.96 57.08 9,388.30			
Connections and blow-offs in various sections.....	4 6 8 12	67.00 1,368.50 423.40 501.11	3,169.81	5,942.04	9,111.85
Fire hydrants erected in new locations.....	6 8	522.15 272.57			
Unfinished mains, June 30, 1909.....			2.14	291.31	293.43
Total.....			50,294.14	154,003.36	204,297.50
Superintendence and engineering, 5 per cent on total cost.....			2,514.71	7,700.17	10,214.88
Aggregate cost.....			52,808.85	161,703.53	214,512.38

TABLE V.—Statement of length and cost of water mains laid from July 1, 1878, to June 30, 1910, paid for out of the water department funds.

Year.	48-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	10-inch.	8-inch.
	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>
1878.....			40					3,719		
1879.....								7,409		
1880.....										
1881.....										
1882.....										
1883.....								1,625		26
1884.....								1,038		
1885.....								763		
1886.....								1,938	791	
1887.....						4,835		1,124	2,998	
1888.....								731		
1889.....					2,312	5,140		5,626	2,784	
1890.....										
1891.....								5,201		
1892.....						2,926	2,500	10,163		
1893.....								6,473		
1894.....						278		39,386		
1895.....					6,617			27,731		
1896.....					294	8,874		11,873		
1897.....						2,180		6,877		
1898.....								7,698		907
1899.....						1,914		2,220		
1900.....			10,902		35	1,282	48	157		
1901.....								10,026		
1902.....				1,227		203		14,010		
1903.....	2,123		14,601			35		9,411		
1904.....	4,019	23	5,231	6,332	18	8,668	24	13,802	68	40,767
1905.....			2,701	9	42			1,014		31,750
1906.....	8,155		97		40	716		3,985		34,880
1907.....			2,697	3,650	4		48	12,066	6	55,798
1908.....				20	10	98		5,513		50,428
1909.....				13	35	11		6,478	4	57,010
1910.....						15,601	25	18,875	7	83,787
Total.....	14,297	23	36,269	11,251	9,407	52,761	2,645	236,932	6,658	355,353

Year.	6-inch.	4-inch.	3-inch.	2½-inch.	2-inch.	1½-inch.	1¼-inch.	Total.	Total cost.
	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	<i>Lin. ft.</i>	
1878.....	12,781	30						16,570	\$14,846.20
1879.....	8,516	1,397						17,322	19,436.03
1880.....	3,024							3,024	
1881.....	3,709							3,709	3,110.70
1882.....	1,920							1,920	1,626.43
1883.....	4,084							5,735	8,073.70
1884.....	8,972							10,010	10,492.51
1885.....								29,372	25,865.35
1886.....	27,766	358	485					44,544	40,025.10
1887.....	35,192		6,623					46,414	56,951.00
1888.....	30,041	292	7,124					22,939	17,626.63
1889.....	9,123	9,148	3,937					67,928	79,342.16
1890.....	36,742	6,571	8,753					40,448	19,113.54
1891.....	34,737	2,856	2,855					76,249	49,702.65
1892.....	56,893	3,142	11,013					108,926	74,733.04
1893.....	88,709	3,342	1,286					72,440	56,339.39
1894.....	54,173	8,336	3,458					142,046	126,599.55
1895.....	86,632	12,832	2,918					146,308	134,502.31
1896.....	103,785	5,442	2,733					87,505	89,395.12
1897.....	61,464	1,738	3,262					94,014	77,954.81
1898.....	71,266	10,595	992			2,104		72,634	48,661.70
1899.....	52,371	6,735	2,790		1,633	500		96,000	65,774.52
1900.....	84,291	4,662	2,701		79	133		73,059	114,784.72
1901.....	53,838	4,211	2,116		17	453		65,812	47,426.71
1902.....	52,018	2,187	935			646		54,209	57,676.33
1903.....	35,481	1,414	1,632	242				61,840	98,498.90
1904.....	32,264	2,004	357				1,045	86,644	404,294.81
1905.....	2,913	1,745	1,637		1,397			39,993	73,402.12
1906.....	1,228	578	2,671					50,903	176,297.98
1907.....	551	781	722				976	81,008	197,066.91
1908.....	2,209	3,081	869		580			63,877	114,411.42
1909.....	3,279	3,089	1,016		424			70,555	115,701.97
1910.....	4,283	1,692	1,029					126,503	214,512.38
1910.....	3,497	2,900	1,292			406	113		
Total.....	1,067,752	101,158	75,206	242	4,130	4,242	2,134	1,980,460	2,634,246.69

TABLE VI.—Statement of the average cost per foot for laying water mains for the year ended June 30, 1910.

	Linear feet.	Cost of labor per linear foot.	Cost of material per linear foot.	Total cost of labor and material per linear foot.	Cost of repairing pavements per linear foot.	Total cost per linear foot laid.
1½-inch.....	113	\$0.251	\$0.179	\$0.430	.....	\$0.430
1½-inch.....	406					
3-inch (alley mains).....	1,272	.441	.423	.864	\$0.430	1.294
4-inch.....	2,605	.274	.394	.668	.104	.772
6-inch.....	535	.419	.700	1.119	.131	1.250
8-inch.....	86,620	.333	.890	1.223	.022	1.245
12-inch.....	14,145	.359	1.242	1.601	.022	1.623
20-inch.....	15,596	.655	2.611	3.266	.202	3.468

TABLE VII.—Statement of the length and cost of water mains laid for the extension of the high-service system of water distribution from July 1, 1893, to June 30, 1910.

Size.	In service June 30, 1909.	Laid during year ended June 30, 1910.	Total in service June 30, 1910.
1½-inch.....linear feet..	2,021	113	2,134
1½-inch.....do.....	2,717	406	3,123
2-inch.....do.....	2,099	.....	2,099
3-inch.....do.....	8,270	1,292	9,562
4-inch.....do.....	16,485	2,900	19,385
6-inch.....do.....	226,520	3,497	230,017
8-inch.....do.....	239,921	83,787	323,708
10-inch.....do.....	78	7	85
12-inch.....do.....	146,871	18,875	165,746
16-inch.....do.....	120	25	145
20-inch.....do.....	24,260	15,601	39,861
24-inch.....do.....	7,096	.....	7,096
30-inch.....do.....	11,251	.....	11,251
36-inch.....do.....	36,229	.....	36,229
42-inch.....do.....	23	.....	23
48-inch.....do.....	14,297	.....	14,297
Total.....	738,258	126,503	864,761
Total cost to June 30, 1909.....			\$1,573,670.42
Total cost for the year ending June 30, 1910.....			214,512.38
Aggregate cost to June 30, 1910.....			1,788,182.80

TABLE VIII.—Statement of the number of public wells in use during the year ended June 30, 1910.

	Shallow wells.	Deep wells.	Total.
In service June 30, 1909.....	11	30	41
In service June 30, 1910.....	11	30	41

## REPORT OF THE WATER REGISTRAR.

WASHINGTON, October 4, 1910.

SIR: I have the honor to submit the annual report of the revenue and inspection branch of the water department, showing in detail the work accomplished during the fiscal year ended June 30, 1910:

## OFFICE WORK.

Accounts audited.....	113,499
Accounts posted and checked.....	80,390
Accounts examined for fractional charges.....	202,508
Authority cards verified and filed.....	2,811
Cards indexed.....	4,295
Cash receipts posted.....	\$600,184.36
Cards canceled:	
Schedule.....	404
Meter.....	102
Checking bills on agents' lists.....	10,300
Change of house numbers on records.....	1,049
Compiling real estate lists.....	1,154
Coupons assorted and filed.....	80,340
Curb cock and box locations recorded.....	3,058
Curb cocks issued.....	2,886
Cut-off orders made and recorded.....	2,837
Cut-off and turn-on orders filed.....	4,815
Delinquent water-rent notices made and compared.....	10,273
Delinquent water-rent lists made and compared.....	165
Drawings, plats, etc., made.....	13
Emergency examinations made in the field.....	862
Examination of records for private services, etc.....	1,157
Examination of service pipes recorded.....	2,156
Files indorsed and returned.....	318
Files indexed.....	421
Files received and abstracts made.....	421
House-to-house examinations recorded.....	4,576
House-to-house leaks found and recorded.....	4,023
House-to-house premises in which leaks were found.....	3,241
Index cards made and checked.....	175
Letters and cards received.....	3,760
Letters and cards sent out.....	9,321
Letters copied.....	8,446
Letters indexed.....	8,446
Lists made and compared.....	1,344
Lists indexed (agents' requests for bills).....	487
Meter accounts opened, new.....	1,458
Meter bills made and checked.....	30,559
Meter accounts computed.....	72,628
Meter computations checked.....	40,123
Meter account cards made and checked.....	601
Meter cards checked.....	1,577
Meters, changes on records recorded.....	912
Meter installation cards made.....	1,457
Meter tests received and recorded.....	1,926
Meters ordered out for test, etc.....	757
Meters ordered repaired.....	627
Meter locations platted on cards.....	34
Meter reading cards made, new.....	3,972
Notices of leaks to agents, etc.....	5,003
Permits for use of fire hydrants.....	111
Permits for use of water for building purposes.....	1,046
Plumbers' permits examined and approved.....	2,825
Plats made showing location of taps.....	1,939
Repairs to services recorded.....	2,825
Record cards made and checked.....	1,947
Refunds of duplicate and erroneous payments.....	137
Reports checked, inspectors'.....	4,105

Reports made, weekly.....	52
Requests for bills indexed and filed.....	1,745
Schedule accounts opened, new.....	2,837
Schedule account cards made and checked, new.....	113
Schedule bills made and checked.....	66,579
Second examination of house-to-house leaks recorded.....	3,510
Special examinations recorded (for rating of premises).....	5,889
Square numbers placed on record cards.....	43,400
Taps issued.....	3,218
Transfer of tap records from books to card system.....	7,565
Tap locations recorded.....	3,385
Turn-on orders made and recorded.....	1,978
Vacant houses listed and cut off.....	1,354
Water-main measurements given to plumbers.....	6,436
Work orders made.....	6,791

## FIELD WORK, GENERAL.

Cut off by request.....	1,320
Cut off for nonpayment, meter accounts.....	20
Cut off for nonpayment, schedule accounts.....	218
Cut off for vacancy.....	1,354
Cuts repaired.....	319
Delinquent water-rent notices served by inspectors.....	4,271
House-to-house examinations.....	25,265
House-to-house leaks found.....	4,023
Meter bills delivered by inspectors.....	20,455
New water services, etc., inspected.....	2,687
Notifications by inspectors for nonpayment.....	2,321
Repairs to water services, etc., inspected.....	2,825
Schedule bills delivered by inspectors.....	25,609
Special examinations for ratings.....	3,510
Taps inserted in water mains.....	3,218
Turned on by request.....	1,016

## FIELD WORK, LEAKS AND WASTES.

Abandoned water services cut off at tap in main.....	1,238
Cut off at box for leak.....	1,198
Cut off at main for leak.....	141
Leaks found on water mains.....	71
Locating stopcock boxes.....	1,427
Second house-to-house examinations of leaks.....	4,303
Special leak examinations.....	18,084
Special leak examinations, second inspection.....	19,051
Tracing leaks to determine their source.....	4,721

## WATER METERS.

Adjusting pits to grade.....	165
District of Columbia meters installed.....	1,325
District of Columbia meters installed in municipal buildings.....	43
Examinations relative to leaks, pressure, etc.....	317
Leaks repaired.....	34
Meters read.....	82,456
Removed for nonregistration, test, etc.....	776
Repaired in place.....	37
Reset after repairs, etc.....	277
Pit tops replaced.....	127
Temporary meters installed.....	353
Temporary meters removed.....	253

## SERVICE PIPES, ETC.

Connecting services.....	77
Leaks repaired on services.....	97
New curb cocks placed.....	31



## SUMMARY.

Leaks found during year.....	2, 502
Service pipes.....	2, 502
Stop cocks.....	119
Street washers.....	333
Yard fixtures.....	5, 041
House fixtures.....	7, 174
Water mains.....	95
Total.....	15, 267

## LEAKS AND WASTES.

The work of cutting off abandoned water services and the supply to vacant premises was continued during the past year and a large amount of wastage of water was prevented by prompt action in such cases.

One thousand two hundred and thirty-eight abandoned water services were cut off at the tap in the main during the year.

One thousand three hundred and fifty-four vacant premises were cut off, an increase of 703 over last year.

## SERVICE CONNECTIONS.

Two thousand eight hundred and eleven new service connections were made, inspected, and locations recorded during the year.

Two thousand eight hundred and twenty-five repairs, etc., to water services and appurtenances were inspected and recorded.

In order to give prompt action to the inspection of service pipes it has been found necessary at times, owing to the great increase in work of this character, to send out as many as four men to assist the inspector having this work in charge. It is the aim of the office to have such inspections made within one hour of the time specified by the plumber. These men, while not so engaged, are employed on clerical work in the office.

## WATER METERS.

One thousand four hundred and forty-seven water meters were installed during the year and 86 were discontinued, making the total number now in use 15,940.

## INSTALLATION OF METERS.

The work of the year consisted mainly in metering the new services in the territory covered in previous years in second, third, and fourth high-service districts. A few places were metered in the city proper where on account of the large waste of water immediate action was considered necessary.

In providing for the new buildings in the metered sections the work was necessarily much scattered, which naturally increased the cost of installation.

The following shows the average cost of installing a meter:

Meter.....	\$8.00
Material.....	3.50
Labor.....	3.57
Total.....	15.07

The following table shows the force engaged on installation:

In charge.....	a 1
Plumber.....	1
Laborers.....	5
2-horse wagon.....	1
1-horse wagon.....	1

The following additional work was performed in connection with the installation of meters: Adjusting meters to proper grade, installing stop-cock boxes, bringing stop-cock boxes to grade, removing meters for test, etc., reporting cuts in improved pavements, repairing minor leaks on service pipes, setting of temporary meters, etc.

a As this man also has charge of taking out and resetting meters for test and repairs and repairs to service pipes, only half of his time and the cost of the horse and wagon used by him is properly chargeable to installation.

## REVENUES.

The table of comparative revenues shows an increase over the previous year of \$27 431.62.

## TABLES.

- Table I shows statement of collections.  
 Table II shows comparative statement of revenues.  
 Table III shows number of water meters in service.  
 Table IV shows number of water meters repaired.  
 Table V shows consumption of water in private residences.  
 Table VI shows consumption of water in buildings owned and controlled by the District of Columbia.  
 Table VII shows consumption of water in premises which receive a free allowance.  
 Table VIII shows consumption of water in business establishments.  
 Table IX shows general information.  
 Table X shows schedule rating of various premises.

## CARD-RECORD SYSTEM.

There are about 300,000 office records kept under the card system.

## WATER RATES.

There has been no change in the water rates during the past year.

The rate for domestic purposes is charged according to stories and front feet. On all tenements two stories high, with a front width of 16 feet or less, \$4.50 per annum. For each additional front foot, or fraction thereof greater than one-half, 30 cents.

For each additional story or part thereof, one-third of the charges as computed above. Business premises are rated according to their size, class, and volume of business, and rate from \$1 to \$25. If the flat rate on a business establishment reaches \$25 or more the owner or occupant is required to install a water meter at his own expense.

The meter rate is 3 cents per 100 cubic feet with a minimum charge of \$4.50 per annum, which allows the use of 15,000 cubic feet, or 112,200 gallons; water used in excess of this amount is charged for at the above rate.

## CONDITION OF WORK.

There was a large increase in business over that of the previous year, but notwithstanding this fact the work was practically up to date at the close of the year.

This result was made possible by the faithful cooperation of the employees, their readiness to meet the exigencies of the service by frequently working after hours, for which I now take occasion to express my appreciation.

Very respectfully, your obedient servant,

GEO. W. WALLACE,  
*Water Registrar.*

The SUPERINTENDENT, WATER DEPARTMENT.

TABLE I.—Statement of collections.

Water rents:		
Schedule.....	\$288,366.68	
Meters.....	217,121.84	
		\$505,488.52
Water-main assessments.....		76,905.15
Taps and stopcocks.....		11,794.75
Building purposes.....	4,280.71	
Sale of old material, etc.....	1,715.20	
		5,995.91
		600,184.36

TABLE II.—Comparative statement of revenues.

Fiscal year—	Water rents.	Water-main assessments.	Taps and stopcocks.	Miscellaneous.	Total revenues.
1898.....	\$264,784.48	\$58,152.56	\$6,910.65	\$1,104.42	\$330,952.11
1899.....	276,065.54	62,937.43	6,327.00	1,545.15	346,875.12
1900.....	286,257.63	53,420.70	5,208.15	4,452.53	349,339.01
1901.....	303,557.19	56,359.72	6,140.85	3,064.39	369,122.15
1902.....	318,404.39	65,962.47	6,368.16	4,659.00	395,394.02
1903.....	326,789.26	70,880.32	6,787.77	3,628.18	408,085.53
1904.....	340,131.72	51,575.87	6,522.67	2,839.66	401,069.92
1905.....	349,264.26	32,192.77	8,603.80	5,737.69	395,798.52
1906.....	359,699.35	34,352.70	9,100.00	2,633.85	405,785.90
1907.....	466,452.19	51,313.97	8,487.10	8,697.66	535,950.92
1908.....	477,306.64	57,462.39	8,688.10	4,050.82	547,507.95
1909.....	498,598.31	57,654.06	10,674.15	5,826.22	572,752.74
1910.....	505,488.52	76,905.15	11,794.78	5,995.91	600,184.36
1911 <sup>a</sup> .....	513,000.00	70,000.00	10,000.00	5,000.00	598,000.00
1912 <sup>a</sup> .....	518,000.00	70,000.00	10,000.00	5,000.00	603,000.00

<sup>a</sup> Estimated.

## Cash repayments:

Salaries.....	\$34.18
High service.....	2,235.71
General expenses.....	4.00

\$2,273.89

Credit to fund by transfer from various appropriations and deposits.....

24,224.69

26,498.58

Receipts for water rents, etc.....

600,184.36

Receipts and reimbursements.....

626,682.94

TABLE III.—Water meters.

	½-in.	¾-in.	1-in.	1-in.	1½-in.	1½-in.	2 and 2½ in.	3-in.	4-in.	6-in.	8-in.	Total.
American.....		162	3	4		1						170
Crown.....		6	13	38		30	16	9	1	1		114
Davies disk.....			1									1
Empire.....		52						1	1			54
Enarc.....			5	7		4						16
Gem.....							29	19	10	2		60
Eureka.....							1					1
Hersey.....		8,170	199	20		66	20	5	2	1		8,483
Hersey detector.....		16				4	5	5	2			32
Keystone (Pittsburg).....		172	33	42	2	24	18	20	1			312
King.....		171										171
Lambert.....		1,169	142	85		73	38	7	4	1		1,519
Nash.....	4	153	553	499		280	120	27	9	3		1,648
Niagara.....			9	3	3	10	8					33
Standard.....			10	4		6	1	1				22
Thomson.....	2	3	71	75		51	31	5	2			240
Trident.....		2,562	14	29		38	7	7	4			2,661
Union.....			34	41		10	9	1	1	1	2	99
Worthington.....		263	1	8		5	17	9	1			304
Total.....	6	12,899	1,088	855	5	602	319	117	38	9	2	15,940
Registers.....												5

Water services.....	63,472
Meters in service.....	15,940
Metered premises.....	15,818
Per cent of services metered.....	25
Private meters.....	2,456
Meters installed by the District of Columbia.....	13,484

TABLE IV.—*Meters repaired.*

	$\frac{3}{8}$ -in.	$\frac{1}{2}$ -in.	1-in.	1 $\frac{1}{2}$ -in.	1 $\frac{3}{4}$ -in.	2-in.	3-in.	4-in.	Parts re- paired.
Meters repaired.....	421	87	60	1	25	26	3	4	.....
Abutments.....	14								14
Bottom cone.....	4								4
Bottom flange.....	3								3
Bottom plate.....	10				1				11
Bridge.....	1				1				1
Cap screw.....	4		4						8
Clock spindle.....	1								1
Cover.....	4	3							7
Control.....						1			1
Disk.....	158	19	22		1	1		1	202
Disk (broken by hot water).....	78								78
Disk chambers.....	10								10
Disk spindle.....	2	2	16		4	1			25
Duplex gear.....		11	10		3	3	1		28
Eccentric crank.....		11	10		3	3	1		28
Eccentric cup.....		9	10		3	3	1		27
Gasket.....	28	18	1		1				48
Glass.....	1	6	5			2			14
Lid.....	20	1			2				23
Register.....	23	1	3		3	3			33
Register points.....	9				1				10
Roller (disk).....	2	2	1						5
Strainer.....	209								209
Stuffing box shaft.....		10	10		3	3	1		27
Top cone.....	5								5
Train gear.....	28	28	25		10	18	2	3	114
Cleaned.....	72	19	8	1	6	4		1	111
Total number of parts.....	685	140	125	2	42	42	6	5	1,047
Total number of meters.....	421	87	60	1	25	26	3	4	627

Number of meters in service.....	15,940
Cost of labor and material for maintenance.....	\$3,016.01
Average cost per meter for maintenance.....	\$0.10

TABLE V.—*Showing the number of houses that have paid the minimum rate of \$4.50; those that have exceeded the amount allowed under this payment; and a comparison between the amount of water allowed and the amount of water used, and the amount paid under the flat rate and meter rate.*

	Houses.	Me- ters.	Amount of water allowed per annum under pay- ment of \$4.50.	Amount of water actually used.	Differ- ence.	Amount used in excess.	Paid me- ter rate, 1910.	Paid schedule rate, 1908 and 1909.
Paid minimum rate.....	11,102	11,102	Cubic feet. 166,530,000	Cubic feet. 82,746,300	Cubic feet. 83,783,700	Cubic feet.		
Paid fractional minimum rate.....	245	245	2,580,100	1,401,400	1,178,700		\$49,959.00	\$68,711.81
Paid in excess of mini- mum rate.....	1,516	1,516	22,740,000	36,195,250		13,455,250	774.03	1,592.80
Paid in excess of frac- tional minimum rate.....	57	57	520,000	766,200		246,200	10,858.57	12,034.65
Two or more houses on one service, minimum.....	65	32	975,000	478,900	496,100		222.60	370.50
Two or more houses on one service, excess.....	16	7	240,000	409,700		169,700	292.50	303.10
Premises on which an al- lowance was made for underground leaks.....	38	36	953,300	1,383,300	430,000		122.91	75.00
Vacated before payment could be enforced.....	51	51	588,100	817,200	229,100		317.37	268.50
No payment for fiscal year 1910 (vacant).....	84	84		64,300			176.43	341.10
Total.....	13,174	13,130	195,126,510	124,262,550	86,117,600	13,871,150	62,723.41	\$4,342.19

Premises.....	13,174
Amount paid.....	\$62,723.41
Average payment for each.....	\$4.76
Considering only the houses occupied during the full year:	
Rate:	
Schedule.....	\$6.39
Meter.....	\$4.76

Meters installed by the District of Columbia during the fiscal year, 1,325.

1.56

TABLE VI.—*Meters installed in various buildings owned and controlled by the District government.*

Class of building.	Annual consumption.	Premises.	Meters.
	<i>Cubic feet.</i>		
Police stations.....	2,467,900	11	11
Engine and truck houses.....	2,927,900	27	28
Schoolhouses, annexes, etc.....	12,866,500	90	96
Workhouse grounds.....	1,013,200	1	7
District of Columbia stables.....	310,400	2	2
District of Columbia morgue.....	32,700	1	1
Cement warehouse.....	6,700	1	1
Parking commission stables.....	86,800	1	1
Ambulance, Board of Charities.....	11,800	1	1
Municipal lodging house.....	33,900	1	1
Public hydrant, Jewett street and Wisconsin avenue.....	28,800	1	1
Lodge house, Brightwood reservoir.....	29,100	1	1
Public drinking fountain.....	3,100	1	1
Total.....	19,818,800	139	152

TABLE VII.—*Premises which receive an allowance of free water.*

	Number.	Consumption.	Allowance.	Exceeded.	Paid.	Meters.
		<i>Cubic feet.</i>	<i>Cubic feet.</i>			
Churches.....	72	2,973,700	4,603,950	11	\$169.20	76
Orphan asylums.....	7	1,792,400	2,094,917	3	38.85	13
Hospitals.....	8	6,636,100	6,791,233	3	493.68	12
Homes.....	13	1,855,300	2,246,775	5	69.51	15
Schools.....	7	2,465,300	2,459,246	2	220.32	7
Neighborhood houses.....	2	123,800	527,500			3
Total.....	109	15,846,600	18,723,621	24	991.56	126

TABLE VIII.—Miscellaneous business establishments under meter, and amount of water consumed for the fiscal year 1910.

	15,000 cubic feet or less.		15,000 to 100,000 cubic feet.		100,000 to 1,000,000 cubic feet.		1,000,000 cubic feet and over.		Total premises of each class.
	Premises.	Cubic feet.	Premises.	Cubic feet.	Premises.	Cubic feet.	Premises.	Cubic feet.	
Miscellaneous business establishments.									
Apartment houses.....	37	346,300	360	19,040,400	109	49,316,000	8	14,520,700	514
Armories.....	2	69,700							12
Art gallery.....	1					260,900			1
Bakeries.....	3	38,300	22	926,000	9	3,291,600			34
Ball ground.....	1		6	124,400					1
Banks.....	4	37,500	6	315,800	2	377,400			12
Barber shops.....	1	5,100	4	111,000					5
Blacksmith shop.....	1	7,300							1
Beachouses.....	2	11,600	1	26,500					3
Bottling works.....	2	5,300	12	1,802,700	8	2,682,100			22
Bowling alleys.....	3	46,000	1	89,100	1	285,600	4	15,175,500	5
Breweries.....									4
Candy factory.....			1	35,200					1
Cemeteries.....	2	11,600	4	178,500		510,700			9
Clubhouses.....	4	50,300	11	698,200	3	533,700	2	4,556,400	20
Coal yards.....	5	33,600	9	342,600	1	138,200			15
Commission merchants.....	1	14,100				130,200			2
Dairies.....	3	30,400	8	284,400	5	1,573,900			18
Department stores.....	1	9,300	5	187,200	4	2,298,300	2	2,223,200	12
Drug stores.....	2	19,700	13	739,800	2	366,200			17
Dye works.....	6	33,000	14	641,600	2	293,000			22
Florists.....	6	35,100	13	653,500	6	1,834,600			25
Freight offices.....			1	15,800	3	1,265,400	1	3,075,700	5
Garages.....	1	11,400	10	518,900	9	2,768,100	1	1,467,500	21
Gas works.....	5	27,300	1	26,700	2	686,000	1	1,697,600	4
Halls.....	2	5,200	19	1,004,400	9	2,004,300			33
Homes.....			1	52,600	3	446,500			6
Hospital.....			1	263,800					1
Hotels.....	2	7,300	25	1,762,000	10	33,692,700	51	16,741,800	88
Ice yards and plants.....	1	7,600	3	181,000			6	37,623,000	10
Iron and brass dealers.....	7	42,700	6	383,300	5	670,500			19
Laundries.....	1	4,100	1	1,189,500	8	3,994,500	7	11,404,900	22
Lawn-tennis ground.....				21,300					1
Lithographers.....	1	8,100			1	154,500			2
Lodging houses.....	1	8,700	2	130,400					3
Lumber and saw mills.....	1	2,300	13	590,600	4	1,215,900			18
Lunch rooms.....	1	6,000	18	1,015,100	6	732,200			25
Machine shops.....	1	1,300	3	87,900					4
Manhole.....			1	154,000					1
Markets.....	1	6,400	4	204,600	5	1,625,100	1	10,323,200	11

	20	105,800	111	5,154,000	68	18,295,400	6	9,928,500	205
Office buildings.....			111	5,154,000	68	18,295,400	6	9,928,500	205
Oil works.....		1,800	2	88,200					2
Plumber's shop.....	1	8,100							1
Pool rooms.....	2	3,300							4
Printing offices.....			9	480,300	10	2,500,900			21
Railroad office and yard.....			1	154,900					1
Saloons and restaurants.....	15	159,800	75	11,241,900	296	16,283,900	1	1,790,200	387
Sausage and dressed meat dealers.....			5	232,000	3	2,050,800			8
Schools and seminaries.....	5	43,800	41	1,998,300	16	3,462,500			62
Scientific institute.....			1	109,300					1
Stables.....	10	27,000	20	761,900	5	1,168,700	1	9,389,600	36
Small manufactories.....	10	160,400	79	3,883,000	31	6,546,300			120
Steamboat offices.....			5	54,200	5	1,821,200			6
Steam mills.....	3	28,100	5	798,900					8
Stone yards.....	1	14,800	2	80,300	6	1,741,200			9
Stores (miscellaneous).....	33	229,300	90	3,934,000	19	4,058,600			142
Street-railway stations and power plants.....	4	19,300	5	146,500	14	5,139,200	4	79,383,200	27
Telephone and telegraph exchanges.....	1	11,600	3	162,400	3	1,292,300			7
Theaters.....	1	12,200	5	237,000	8	2,720,500			14
Turkish bath.....					1	591,300			1
Undertakers.....			5	138,000					5
Universities.....	2	21,200	4	200,300	6	2,358,800			6
Veterinary hospitals.....	8	34,300	10	472,100	1	285,600	1	1,010,300	20
Warehouses.....	28	69,500							28
Vacant, etc.....									
Total.....	256	1,952,500	1,076	64,232,800	715	183,377,000	99	227,586,400	2,146
Private residences.....	78	475,700	90	4,119,300	11	2,831,000	1	1,322,700	180
Grand total.....	334	2,428,200	1,166	68,352,100	726	186,208,000	100	228,909,100	2,326

TABLE IX.—General information.

Taps inserted in water mains.....	3, 218
Meters installed by the District of Columbia.....	1, 325
Meters installed by the District of Columbia in municipal buildings.....	43
Meters installed by private parties at their own expense.....	73
Meters in service.....	15, 940
Water services.....	63, 472
Percentage of water services which are metered.....	25
Average cost of installing a water meter by the District of Columbia.....	\$7. 07
Average cost of repairs to meters.....	\$0. 19
Average cost of reading meters.....	\$0. 25
Average cost of computing meter accounts and making bills.....	\$0. 25
Average payment for premises in which meters were installed by the District of Columbia.....	\$4. 76
Average payment for premises in which private meters were installed.....	\$62. 42

TABLE X.

## DOMESTIC PURPOSES.

Rate.	Number.	Business in connection with domestic purposes.	Rate.	Number.	Business in connection with domestic purposes.
\$4.50.....	18, 692	1, 331	\$14.50.....	50	3
4.80.....	2, 274	236	14.70.....	2	1
5.10.....	1, 939	254	14.80.....	12	1
5.40.....	891	161	15.00.....	26	2
5.70.....	2, 145	405	15.20.....	7	1
6.00.....	3, 695	337	15.50.....	13	1
6.30.....	431	122	15.60.....	29	6
6.40.....	1, 270	70	15.90.....	2	1
6.60.....	120	63	16.00.....	45	2
6.80.....	1, 485	82	16.20.....	12	5
6.90.....	287	75	16.40.....	2	1
7.20.....	1, 050	143	16.50.....	7	1
7.50.....	501	54	16.60.....	1	1
7.60.....	1, 423	158	16.80.....	4	1
7.80.....	72	21	17.00.....	15	1
8.00.....	657	66	17.20.....	6	1
8.10.....	100	12	17.40.....	8	1
8.40.....	486	66	17.50.....	7	1
8.50.....	421	18	17.60.....	6	1
8.70.....	76	22	18.00.....	16	1
8.80.....	269	43	18.20.....	1	1
9.00.....	374	23	18.50.....	7	1
9.20.....	222	50	18.60.....	1	1
9.30.....	44	6	18.80.....	8	1
9.50.....	693	33	18.90.....	1	1
9.60.....	263	59	19.00.....	9	1
10.00.....	307	2	19.20.....	1	1
10.00.....	307	30	19.50.....	18	4
10.20.....	21	3	19.60.....	3	1
10.40.....	53	10	19.80.....	7	1
10.50.....	238	22	20.00.....	3	1
10.80.....	53	6	20.40.....	9	1
11.00.....	163	19	20.50.....	3	1
11.10.....	10	1	20.70.....	2	1
11.20.....	15	1	21.00.....	9	1
11.40.....	42	4	21.20.....	1	1
11.50.....	157	18	21.50.....	6	1
11.60.....	53	7	21.60.....	2	1
11.70.....	10	2	22.00.....	16	2
12.00.....	240	21	22.50.....	9	1
12.30.....	27	1	22.80.....	1	1
12.40.....	21	1	23.00.....	6	2
12.50.....	74	6	23.20.....	1	1
12.60.....	25	1	23.40.....	2	1
12.80.....	10	3	23.50.....	3	1
12.90.....	2	1	23.60.....	1	1
13.00.....	47	6	23.70.....	1	1
13.20.....	22	3	24.00.....	7	1
13.50.....	39	6	24.40.....	1	1
13.60.....	11	1	24.50.....	6	1
13.80.....	33	1	24.60.....	2	1
14.00.....	24	6	24.90.....	1	1
14.10.....	2	1	25.00.....	1	1
14.40.....	47	3	25.20.....	1	1



TABLE X—Continued.

## DOMESTIC PURPOSES—Continued.

Rate.	Number.	Business in connection with domestic purposes.	Rate.	Number.	Business in connection with domestic purposes.
\$25.50.....	1		\$31.50.....	1	
26.00.....	3		31.80.....	2	1
26.40.....	1		32.00.....	2	1
26.50.....	5		32.50.....	2	
27.00.....	1	1	33.00.....	5	2
27.50.....	1	1	34.80.....	1	1
28.00.....	3	2	35.40.....	1	
28.20.....	1	1	35.50.....	1	1
28.50.....	1		36.00.....	1	1
28.80.....	2		37.20.....	1	
29.00.....	1		37.50.....	1	
29.40.....	2		45.00.....	1	
29.50.....	1	1	47.40.....	1	
29.60.....	1		3.50.....	43	
30.50.....	1				
31.00.....	1		Total.....	42,442	4,150

## PREMISES HAVING BUSINESS CONDITIONS WHICH ARE CHARGED FOR WATER RENT UNDER THE FLAT-RATE OR SCHEDULE SYSTEM.

Character of business.	Number.	Business conditions on domestic purpose accounts, etc.	Accounts.
Apartment houses.....	4,141		1,782
Automobiles.....	259	162	36
Bakeries.....	38	29	6
Banks.....	2	1	1
Barrooms.....	38	19	18
Barber shops.....	246	167	69
Blacksmith shops.....	12	6	3
Boathouse.....	1		1
Bollers.....	5	5	
Bowling alleys.....	4		3
Carpet cleaning establishments.....	2	1	1
Charged by fixtures.....	623	9	155
Cigar manufactories.....	3	2	
Clubs.....	7	4	2
Coal and wood yards.....	3		3
Colleges.....	3		3
Cows.....	35	34	1
Dairies.....	38	34	4
Drug stores.....	98	66	28
Dyeing and cleaning establishments.....	6	3	3
Engines, gas.....	22	14	8
Engines, stationary.....	9	9	
Factories.....	10	1	8
Fish house.....	5	1	
Florists.....	8	4	4
Garages.....	5	1	2
Halls.....	21	2	19
Horses.....	5,516	3,250	358
Ice cream manufactories.....	1		1
Ice house.....	1		1
Ironworks.....	3	2	1
Laundries.....	159	146	13
Lunch rooms.....	268	199	69
Mills.....	2	1	1
Offices.....	403	226	121
Oyster houses.....	33	21	12
Photograph galleries.....	27	14	12
Pool rooms.....	63	21	35
Printing offices.....	28	18	10
Schools.....	3	2	1
Shops.....	858	545	283
Signal tower.....	1		1
Slaughterhouses.....	1	1	
Smokehouses.....	2		2
Stone yards.....	4		4

TABLE X—Continued.

PREMISES HAVING BUSINESS CONDITIONS WHICH ARE CHARGED FOR WATER RENT UNDER THE FLAT-RATE OR SCHEDULE SYSTEM—Continued.

Character of business.	Number.	Business conditions on domestic purpose accounts, etc.	Accounts.
Storage rooms.....	10	4	6
Stores.....	2,760	2,120	640
Street washers.....	3		3
Studios.....	6	3	3
Tennis courts.....	1		1
Theaters.....	61		61
Undertakers.....	18	16	2
Warehouses.....	46	6	40
Total.....	15,982	7,169	3,840
Domestic purposes.....			42,442
Business purposes.....			3,840
Unfinished, etc.....			1,481
Total schedule accounts.....			47,763
Average payment, schedule accounts.....			\$6.04

## REPORT OF SUPERINTENDENT OF SEWERS.

WASHINGTON, D. C., September 21, 1910.

SIR: I have the honor to submit the following report for the fiscal year ending June 30, 1910.

DIVISION A.—*Drainage studies, plans, and engineering data.*

In addition to the plans, surveys, and estimates for ordinary sewer extensions and betterments, drainage studies covering more than twenty square miles of suburban territory have been wholly or in part developed.

In the upper Potomac areas, between Foundry Branch and Falls Branch, work was continued during the year on studies for future drainage and development; also on both slopes of Rock Creek Valley, where on the west drainage plans for the separate system have been developed to the Maryland line, including the recent subdivisions of Pinehurst and Blue Ridge Summit. On the easterly slope of Rock Creek Valley, plans for the separate system have been quite fully developed as far as the District boundary, and the trunk sewers for these services constructed. In the Anacostia River Valley, along the westerly slope, drainage plans have been extended to Bunker Hill road, which is the limit of existing projects for this valley.

On the east side of the river, plans for the Anacostia main interceptor, including substation lifts, have been in course of development during the year; also surveys for rights of way and plans for the same have been completed and rights of way secured for the entire line, exclusive of dedication. For the first section of this important interceptor construction plans are now being prepared, extending from the main outfall of the sewage-disposal system at Poplar Point to the new Anacostia Bridge. This section will remove the sewage of the town of Anacostia and vicinity (population about 6,000) from the river, and is an essential preliminary to the river improvement that must precede the reclamation of the Anacostia flats. In the upper valley east of the river, where no sewerage at present exists, drainage plans as far as Bennings and Kenilworth are sufficiently developed to begin construction as soon as the water-supply system can be extended.

For the Rock Creek main interceptor additional rights of way were secured by voluntary dedication, without expense to the District of Columbia, practically completing this work. Detail surveys and construction plans are in preparation for the first section of this trunk line, that is, from the Rock Creek and B street interceptor at Florida avenue to the Massachusetts Avenue Bridge. This section will provide an outlet for a large and developing area where the sewage has heretofore discharged directly into Rock Creek, and it will also permit the abandonment of the old and defective intercepting sewer now in service. These works are being designed to accord with the plans heretofore submitted for the open valley park treatment of this portion of Rock Creek Valley.

On the east side interceptor, boundary to Brookland, detail plans have been prepared to Bunker Hill road, and the construction is in progress on this interceptor as far north as Monroe street, which will exhaust all funds appropriated to date. By September 1, 1910, it is anticipated that the interceptor will be in service from Lawrence street through to the sewerage pumping station, a distance of 5 miles. In addition, plans have been prepared for the lateral system on both slopes of the Rhode Island avenue divide, covering the entire area to the westward as far as Thirteenth street, which is the easterly boundary of the existing Brookland system. This section is already provided with water supply and the construction of service sewers should proceed more rapidly than the state of funds has heretofore permitted.

#### COMBINED SYSTEM.

The only considerable development of the combined system during the year was in the Piney Branch Valley, where construction plans for the first section of the Piney Branch trunk sewer were prepared and executed, and also plans prepared for two extensions of this important sewer, one for the 9 foot 9 inch diameter section extending to Fourteenth street, and the other for a connecting section 9 feet 3 inches in diameter reaching to Georgia avenue. The latter will receive the drainage from the recently constructed West Brightwood trunk sewer, which serves a large territory and is now being extended to the north as far as Brightwood, where for more than thirty years there has been a considerable settlement with no drainage facilities. The development of streets and extensive building in this vicinity rendered the West Brightwood sewer absolutely necessary, yet on account of the very meager appropriations, its construction was only possible by obtaining from interested property owners a cash contribution of nearly \$14,000.

#### SEPARATE SYSTEM.

During the year a number of important trunk lines were completed, which reach suburban areas heretofore without sewerage. Among these are the Beach Drive trunk sewer, furnishing an outlet for all drainage as far as Military road; the Broad Branch trunk, reaching a large and rapidly developing section in the vicinity of Connecticut avenue extended, and constructed primarily to eliminate a so-called "sewage treatment" plant built in upper Broad Branch Valley, which had become a nuisance and was seriously polluting the waters of this small park stream, and also the Luzon Valley trunk sewer, which provides for a very large area on either side of Georgia avenue to the District line, and now furnishes an outlet for the sewerage system in the grounds of the Walter Reed Army Hospital. Aside from the completion of these main lines, attention has been given almost entirely to the development of the lateral system from these trunk lines and others previously built. Nearly 10 miles of service sewers in the vicinity of Tenley, Reno, Chevy Chase, Cleveland Park, Petworth, Brightwood, Takoma, and Langdon were built during the year. The mileage was the largest in the history of the system.

#### SEMICOMBINED SYSTEM.

The semicombined system for the valley north of R street was completed during the year with one extension as far north as Observatory lane, which permitted the connection of the sewerage of the Industrial Home School with the gravity system, thus eliminating an appropriation of \$500 per annum for sewage pumping heretofore required; and two extensions to Wisconsin avenue, which furnish outlets for service sewers that were constructed during the year within the area along Wisconsin avenue and westward, as well as storm-water catchment basins for street areas, thus freeing the stream in this valley from long existing pollution by house sewage, overflowing cesspools, and street washings. Not only has this attractive stream, in what is practically a park valley, been maintained and restored to its original purity, but by the semicombined system designed for this valley a saving has been effected of about \$32,000, or nearly 70 per cent of the estimate for the combined system which was projected for this valley several years ago.

#### CONSTRUCTION.

Considering the wide dispersion of population since electric transit facilities developed, the extension of the sewerage system has not kept pace with the growth of the District. So far as limiting the requirement for sanitary conveniences is concerned, suburban conditions as once understood no longer exist. Water supply and sewerage

are now a health department requirement throughout the District, and a sewer has become as essential a part of a house as its roof, yet the number of dwellings without sewer connections have recently increased rather than diminished, notwithstanding the effort that has been made to stretch the sewer construction by small and inexpensive "separate" sewers to the greatest possible mileage. At present there are nearly 3,000 dwellings without available sewers and several hundred with subsoil drains, septic tanks, cesspools, and other makeshift arrangements. Considerably increased funds are greatly needed to provide long-delayed sewerage in many sections and to permit the rational development of the system. The rapid development of urban areas in many parts of the District urgently requires constant extension of the combined system, or its equivalent, the construction of storm sewers. As the natural water courses are filled by grading the extended streets to the established grades, artificial water courses must be provided, and yet for several years funds have been substantially denied for this work, and at present it is seriously in arrears. The following tabulation shows the approximate increase in population during fifteen years and the funds appropriated for construction of the sewerage system each year during the same period:

Year.	Population.	Appropriations for construction. <sup>a</sup>	Miles constructed.	Average cost per mile.
1891.....	235,000	\$223,000.00	15.50	\$14,387.10
1892.....	240,000	219,000.00	13.08	16,743.12
1893.....	245,000	165,000.00	12.06	13,681.59
1894.....	250,000	291,000.00	14.63	19,904.99
1895.....	255,000	177,500.00	13.23	13,416.48
1896.....	259,000	185,300.00	13.25	13,984.91
1897.....	264,000	240,000.00	17.49	13,722.13
1898.....	269,000	146,000.00	13.74	10,625.91
1899.....	274,000	136,000.00	12.14	11,202.64
1900.....	279,000	126,000.00	13.17	9,567.20
1901.....	284,000	206,000.00	13.25	15,547.17
1902.....	289,000	181,000.00	15.55	11,639.87
1903.....	294,000	121,000.00	11.20	10,803.57
1904.....	300,000	123,000.00	8.78	14,069.11
1905.....	305,000	100,150.00	11.99	8,352.79
1906.....	310,000	88,000.00	15.54	5,662.81
1907.....	315,000	235,000.00	17.04	13,750.00
1908.....	321,000	172,800.00	19.74	8,753.80
1909.....	326,000	152,000.00	20.85	7,290.17
1910.....	331,000	171,875.00	25.95	6,623.31

<sup>a</sup> Excluding maintenance and sewage, disposal system.

#### MAINTENANCE.

Notwithstanding the very limited appropriation for maintenance, which has steadily declined from \$150 per mile in 1890 to less than \$90 per mile for the fiscal year 1910, the sewerage system is in appreciably better condition than ever before. The work of maintenance has been greatly improved during the year, and is organized on as thorough and efficient a basis as proper sanitation demands, within the limit of the extremely rigid economy required. With a more liberal appropriation for this work many improvements could be made in the condition of the system, but the urgent demand for sewer extensions in all parts of the District has led to the present economy in maintenance. Twice annually all trunk sewers (119 miles) are carefully inspected throughout and detailed notes made of all defects, needed repairs, or cleaning required. Cleaning and minor repairs are promptly made, and larger repairs as far as funds will permit. Substantial reconstruction is the only remedy in some cases. Notable examples of this are the reconstruction during the year of the Fourteenth street trunk sewer in tunnel between New York avenue and H street, and the construction of a 24-foot steel-concrete sewer within the old 30-foot span Tiber sewer near the Union Station. The Fourteenth street sewer was falling to pieces under the street railway tracks, due to the heavy car traffic, and the Tiber sewer was crushing under the great fill at the Union Station. On account of the exigency of the work, both constructions were by day labor, in charge of the department's regular foremen, and in both cases the work was admirably executed, and with the greatest expedition.

All pipe sewers (449 miles) are thoroughly inspected and flushed twice annually, except the separate system sewers, which are much more frequently flushed by hand and by automatic flush tanks. The cleaning of pipe sewers is constantly in progress and is carried on wherever it is found necessary. Minor repairs are made where the inspection develops defects, and defective lines beyond repair are reconstructed.

The reconstruction is, however, necessarily much curtailed on account of the limited funds for this work, and a number of years will be required to replace the old and faulty sewers still in service. There was no instance of the stoppage of a public sewer during the year, although a considerable number of private sewers were reported to be stopped. All catch basins are thoroughly cleaned and flushed at least once each month, and, in addition, a very large number within the closely built-up area are flushed at intervals of one week or less. Street cleanings continue to find their way into the sewerage system to a greater extent than necessary and largely increase the cost of cleaning. As shown by the following tabulation, the total length of sewers requiring maintenance has been increased in twenty years from 285.3 to 568.03 miles, yet the appropriation for maintenance has scarcely increased at all:

Year.	Length of sewers.	Appropriation for maintenance. <sup>a</sup>	Cost of maintenance per mile.
	<i>Miles.</i>		
1891.....	285.30	\$42,000.00	\$147.21
1892.....	298.38	43,000.00	144.11
1893.....	310.44	45,000.00	144.96
1894.....	325.07	45,000.00	138.43
1895.....	338.30	45,000.00	133.02
1896.....	351.55	45,000.00	128.00
1897.....	369.04	50,000.00	135.49
1898.....	382.78	50,000.00	130.62
1899.....	394.92	50,000.00	126.61
1900.....	408.09	50,000.00	122.52
1901.....	421.34	50,000.00	118.67
1902.....	436.89	58,000.00	132.76
1903.....	448.09	58,000.00	129.44
1904.....	456.87	58,000.00	126.95
1905.....	468.86	58,000.00	123.70
1906.....	484.40	42,000.00	86.71
1907.....	501.44	38,000.00	75.78
1908.....	521.18	44,500.00	85.38
1909.....	542.03	45,000.00	83.02
1910.....	567.98	48,500.00	85.39

<sup>a</sup> Exclusive of sewage-disposal-system maintenance.

#### SEWER VENTILATION.

Special study is being given to the subject of sewer ventilation. This is of great importance, particularly for the large sewers of the combined system, where even with the best construction it is impossible to maintain really sanitary conditions without effective ventilation. Public prejudice has long demanded the air-tight sealing up of the sewerage system, thus creating the exact conditions to produce the cause of complaint, viz, offensive odors from the stagnant inclosed air, which has been given the dread but exceedingly erroneous name of "sewer gas." Immense aid to practical and efficient ventilation is anticipated from the disuse of running traps on house connections, just now being permitted. This has been urged by the sewer department for several years, and is a long step forward in the interest of better sanitation. In old days, when sewers were but little better than attenuated cesspools, doubtless the running trap might fairly have been considered a necessary safeguard against the dangers lurking in every drain, but the modern development of sanitary sewers, with the thorough cleanliness maintained, renders the running trap not only a needless expense to the property owner, but a positive impediment to proper sanitation.

#### JAMES CREEK DRAINAGE CANAL.

This old sewer canal has been abandoned and filled from the end at G street southward nearly to N street, and the great volume of sewage formerly discharging therein is being removed by the sewage-disposal system. It is now important to determine the future policy as to the open part of the canal between N street and the Anacostia River, a length of about 4,500 feet, which is now receiving a small volume of sewage along its east bank. The uncertain future of this portion of the canal has prevented the development of any sewerage in the adjacent territory. For, if the canal is to be maintained, the separate system should be constructed, and if abandoned, the combined system will be required to provide for storm water drainage which now finds an outlet into the canal. The question, too, of the proposed dike across the canal at N street, to exclude the river when at freshet stage, is similarly involved.

The use of the canal for commercial purposes appears to be the only reason for its continuance. This is necessarily confined to two blocks, between N and P streets, a frontage of less than 1,000 feet, and for which nearly a mile of canal must be maintained. This can hardly be justified economically; and for sanitary reasons, especially in view of the proximity of the War College and the Washington Barracks, its further maintenance is believed to be undesirable.

It is therefore recommended that the canal be abandoned, and filled to the established bulkhead line of the Anacostia River, and also that the surface grade be fixed approximately at 12 feet above District of Columbia datum. This will obviate the proposed dike construction at N street and permit the construction of the sewerage system southward therefrom. It is suggested, too, that this will make possible the development of a great avenue extending to the Army War College from the Capitol grounds. Having a width of 240 feet, it affords unusual possibilities for boulevard treatment, and would form a beautiful and dignified entrance to the War College grounds, which now has very undesirable approaches only.

#### RAINFALL AND RUN-OFF.

Synchronous observations of rainfall were continued throughout the year at stations already established, but it was not possible to equip additional stations on account of the lack of funds which could be devoted to this important work. Run-off records were obtained during the latter part of the year by automatic gauges of the run-off from the low district, which included nearly 900 acres of city area. These will form a continuous record from which valuable data as to run-off are anticipated. Gauging tables and curves are being prepared for sight reading of discharges, which will enable results to be rapidly obtained. This requires, in addition to the installation of the recording apparatus, a large amount of computation, on which work proceeds slowly; but as this and other extra work on engineering data must be carried on by the small regular force employed on the drainage system, the progress is considered satisfactory.

*Record of usual storm, showing difference in precipitation at several stations.*

Time.	Station A.	Station B.	Station C.	Maximum rate, inches per hour.		
				Station A.	Station B.	Station C.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
8 p. m. ....	0.00	0.00	0.00			
9 p. m. ....	.70	.14	.06	0.70	0.18	0.12
10 p. m. ....		1.00	.20		1.10	.20
11 p. m. ....		1.30	1.27		.56	1.34
12 p. m. ....		2.58	1.42		1.91	.24
12.55 a. m. ....	1.31	3.12	2.86		1.00	2.07

NOTE.—A, U. S. Weather Bureau; B, sewerage pumping station; C, Bennings station. Maximum rate, for 30 minutes or more.

#### RIVER FLOW AND SEWAGE DILUTION.

The sewage outfall was under careful observation throughout the year, and the condition of the river in the neighborhood of the outfall was excellent, even under the worst conditions, that is, through periods of minimum river discharge. The following is a tabulation of the minimum, maximum, and mean flow of the Potomac River at that point for each month in the year, the average discharge of sewage for each month, and the dilution attained.

Month.	Average river.	Maximum river.	Minimum river.	Average sewage.	Per cent of sewage to water.
	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	<i>Sec.-feet.</i>	
July.....	2,990	7,330	1,520	108	3.61
August.....	2,270	4,170	1,130	105	4.62
September.....	1,860	2,400	1,400	106	5.07
October.....	2,440	5,020	1,090	106	4.34
November.....	2,050	2,200	1,520	101	4.93
December.....	3,320	6,520	1,750	105	3.16
January.....	19,450	80,500	2,960	108	.56
February.....	18,060	80,500	4,330	103	.57
March.....	10,980	33,500	3,400	107	.97
April.....	11,080	36,800	2,810	108	.98
May.....	28,600	12,000	3,860	108	.38
June.....	29,100	154,800	3,700	109	.38

The sewerage pumping service was operated without interruption throughout the year, delivering the sewage of substantially the entire district to the outfall at Grimes, on the Potomac River. In the station the sewage is passed first through the sediment chamber, then through screens, and finally through a skimming tank, where all insoluble materials are removed, as well as all or nearly all waste oils and grease. The effect of this treatment is particularly observable in the condition of the outfall sewer, which is noticeably free from deposit along its walls at the flow line, and entirely clear of sediment of any kind, although having a gradient of less than 2 feet to the mile. After three years' service the interior masonry of this sewer is quite bright and clean, and a recent examination around the 6-inch diameter outfall pipes in the bottom of the Potomac River, by a submarine diver, discovered no sludge or sediment whatever. The condition of the surface of the river at this point has been altogether unobjectionable, and, without exception, entirely free from the "sleek" caused by floating oils and grease so noticeable and objectionable at the sewage outfalls of other cities.

After three years of uninterrupted service, as a matter of record, it should be stated that this and other sections of the sewage-disposal system have thus far proven in the highest degree satisfactory, and have fully justified the great care and attention given to every feature of their design.

#### METROPOLITAN DISTRICT.

After careful consideration of the subject and a study during the year of developing conditions, I would renew the recommendation contained in my last annual report that steps be taken toward securing Rock Creek and the Anacostia River from pollution by the sewage of suburban towns in the State of Maryland adjacent to the District of Columbia. The district is expending large sums of money for drainage works within its borders to exclude all the sewage from these streams, while, at the same time, just across the line in Maryland, raw sewage is discharged in increasing volume from the neighboring villages and towns. This is of importance, not only to the Rock Creek parks and the proposed parks of the Anacostia River Valley, but to the city itself, through which these streams flow. The only adequate solution of the problem is the extension of interceptors up both valleys to connect with laterals from the several towns, thus providing for the sanitary removal of the sewage. These interceptors should be so arranged as to discharge at the Maryland line into the interceptors of the sewage-disposal system of the District of Columbia. The construction and maintenance of the interceptors should be provided for by a state tax levied against the communities benefited and from which the District would be reimbursed for the actual cost of pumping and handling the Maryland sewage. To provide the necessary executive control would require the formation of a metropolitan drainage district, with a state and national board, with power to construct the necessary interceptors and provide for their maintenance, apportioning the cost of same and enforcing such regulations as may be necessary for the protection of the drainage works and their utilization.

On account of the complication of jurisdictions requiring joint federal and state legislation, the problem is exceedingly complex, and its solution at best will be long delayed and difficult. It is important, therefore, that work be begun without further delay, and it is respectfully recommended that Congress be requested to authorize the commissioners to enter into a thorough consideration of the subject with the Maryland authorities with a view of suggesting such legislation, both state and national, as will be necessary. The joint interest of both jurisdictions in this matter is indicated by the additional fact that 6,000 acres of district area drain into the State of Maryland and 130,000 acres of Maryland area drain into the District of Columbia.

The present conditions are not such as to render this a matter of immediate urgency, but the pollution in these areas is quite rapidly increasing, so that for a subject so complicated in jurisdiction and legislation especially, which will require a number of years to develop, it is believed not too soon to begin the work. The purity of these streams is so important for the protection of the park systems, and in the interest of public health and sanitation, that action should be no longer delayed.

#### UNDERGROUND CONSTRUCTION, PUBLIC-SERVICE CORPORATIONS.

This work includes the supervision of underground construction of the various public-service corporations and requires (a) field examination and location for proposed work, (b) supervision of construction, and (c) record. The work is regularly inspected during construction and accurate field locations made as the work progresses. From data thus obtained record sheets are prepared, showing the actual construction and location in detail. In addition the work is platted on a standard set of maps and

recorded on the progressive card system. This work was systematized near the end of the fiscal year 1908. Previous to that time there was no adequate inspection or record of construction. It is the purpose, however, to perfect the records of previous years. The value of the records, although still far from complete, is evinced by the frequency with which they are consulted by the various departments and by officials of the several corporations. Careful consideration is required to be given each proposed underground structure, both with a view of securing proper location and uniformity in alignment, and as well, the utmost conservation of public space for future needs. Unfortunately the lack of care in this regard in former times has created, in the more congested territory, conditions already embarrassing, and which in future will be difficult and expensive to remedy. So far as practicable the roadway space of streets is reserved for trunk-line conduits, trunk-line gas mains, sewers and water mains, and the space between the curb and building lines for local service. Special effort in residence sections is made to conserve the parking spaces.

#### DIVISION B.—*Maintenance, sewerage system.*

The maintenance of the sewerage system includes the flushing, cleaning, and repairing of (a) pipe sewers, length 448.83 miles; (b) main sewers, length 119.20 miles; (c) storm-water receiving basins, 4,600; (d) gravel catchment basins, 10.

Under the appropriation for cleaning and repairing sewers and basins the following work was performed:

##### Cleaning:

Main sewers cleaned .....	feet ..	1, 185
Pipe sewers cleaned .....	do. ....	149, 626
Pipe sewers flushed .....	do. ....	3, 717, 332
Manholes flushed .....	number ..	11, 943
Sumps cleaned and inspected .....	do. ....	568
Storm-water receiving basins cleaned .....	do. ....	57, 753
Storm-water receiving basins flushed .....	do. ....	18, 884
Gravel catchment basins cleaned .....	do. ....	4
Basin outlets cleaned .....	do. ....	19

##### Sludge removed:

Main sewers .....	cubic feet ..	913
Pipe sewers .....	do. ....	5, 052
Storm-water receiving basins .....	do. ....	190, 204
Gravel catchment basins .....	do. ....	2, 595
Screens, sewerage pumping station .....	pounds ..	890, 230
Sediment chamber, sewerage pumping station .....	cubic feet ..	58, 577

##### Inspection and repairs:

###### Main sewers—

Main sewers inspected .....	miles ..	114
Bulkheads constructed .....	number ..	10
House connections inspected and repaired .....	do. ....	109

###### Pipe sewers—

Pipe sewers inspected, length .....	miles ..	448.78
Pipe sewers relaid, including basin connections .....	feet ..	1, 032
Sumps reconstructed .....	number ..	3
Settlements refilled .....	do. ....	13
Manholes reconstructed .....	do. ....	12
Manholes adjusted and repaired .....	do. ....	114
Manholes abandoned .....	do. ....	5
Manhole frames replaced .....	do. ....	111
Manhole covers replaced .....	do. ....	186

###### Basins, storm-water receiving—

Reconstructed .....	do. ....	40
Repaired .....	do. ....	110
Abandoned .....	do. ....	15
Outlets repaired .....	do. ....	4
Tops replaced .....	do. ....	47
Alley grates replaced .....	do. ....	42
Alley frames replaced .....	do. ....	10



Cost:

Cleaning and inspection—	
Inspecting main sewers .....	\$840. 81
Inspecting and cleaning gates and regulators .....	302. 05
Cleaning main sewers .....	188. 47
Cleaning pipe sewers .....	3, 634. 53
Flushing pipe sewers .....	2, 244. 61
Cleaning storm-water receiving basins .....	14, 568. 93
Flushing catch basins .....	780. 00
Inspecting and cleaning sumps .....	127. 84
Cleaning gravel catchment basins .....	173. 28
Inspecting duplicate pipe lines .....	183. 31
Repairing—	
Main sewers—	
D street southeast, between First street and New Jersey avenue .....	\$1, 950. 90
Fourteenth street NW., between New York avenue and H street .....	506. 75
Tiber sewer, North Capitol and E streets .....	10, 696. 23
Miscellaneous main sewers .....	364. 58
Total .....	13, 518. 46
Pipe sewers and basin connections .....	1, 887. 10
Reconstructing sumps .....	268. 78
Reconstructing manholes .....	538. 34
Adjusting and repairing manholes .....	642. 15
Replacing manhole frames and covers .....	993. 30
Filling settlements over sewers .....	67. 55
Reconstructing storm-water receiving basins .....	1, 832. 08
Repairing storm-water receiving basins, brickworks, etc .....	552. 36
Abandoning storm-water receiving basins .....	80. 08
Replacing storm-water receiving basin tops .....	431. 27
Replacing alley grates and frames .....	188. 60
Repairs and maintenance of equipment .....	2, 189. 52
Abandoning manholes .....	19. 42

## DIVISION C.—Construction, sewerage system.

The work of this division includes the engineering work on sewer construction both by day labor and contract, as well as surveys for current projects and for drainage studies. An improvement in the organization of the division has been effected by assigning to the assistant engineers individual territory. Under this arrangement each assistant engineer has a specified area and is in responsible charge of all engineering work on construction and surveys within this area. This effects a considerable economy in time lost in travel, and should arouse a greater personal interest in the work of each section than formerly when the assistant engineers were sent hither and thither with constantly overlapping work. But even with this arrangement two serious defects exist—the number of assistant engineers available for field work is too small for the extent of the work, and the territory to be covered, which averages 20 square miles each, and the means of transportation for the field parties consisting of a heavy field wagon drawn by one horse is inadequate, nearly half of the time of each field party being consumed in going to and from the work. The authority to purchase one motor vehicle for field work granted for the next fiscal year partly remedies the latter defect, but the engineering work can not be properly executed until a motor vehicle is provided for each field party.

The work of the fiscal year, performed under various contracts and by force account, is described under the several appropriation headings, as follows:

## MAIN AND PIPE SEWERS.

From the appropriation for main and pipe sewers under a contract executed near the close of the preceding fiscal year there was constructed in Missouri avenue, between Third and Sixth streets NW., 1,395.12 linear feet of 2.5 by 3.75 foot egg-shaped sewer replacing the old Missouri avenue trunk sewer at a lower elevation and in a more advantageous location. As an outlet for the above in Four-and-a-half street, between Missouri and Maine avenues, 908.1 feet of 4-foot 6-inch diameter sewer was constructed, connecting with the New Jersey avenue and B street trunk sewer.

By day labor, pipe sewers were laid under 85 jobs, in the aggregate 2,834.4 linear feet, varying in size from 8-inch to 24-inch, and including 18 manholes.

The old Thirteenth-street sewer was reconstructed from Ohio avenue and Thirteenth street to Pennsylvania avenue and Thirteenth street NW. (769.22 linear feet of 4-foot 6-inch diameter sewer and two manholes) and the Fourteenth-street trunk sewer was replaced from New York avenue to H street NW. by 393 linear feet of 4-foot 6-inch by 4-foot 6-inch sewer in a new location. Also in the old sewer there was inserted 73 linear feet of 15-inch pipe around which concrete was placed, filling the old 4-foot 6-inch sewer.

#### SUBURBAN SEWERS.

Under contract the semicombed system trunk sewer in the valley north of R street, started near the close of the preceding fiscal year, was completed to Observatory lane, furnishing an outlet for several branch lines which were built by day labor. The length constructed was 7,887.4 linear feet in sizes 24-inch diameter, 21-inch diameter, and 18-inch diameter.

The Falls Branch trunk sewer was extended to Wisconsin avenue at its intersection with Fessenden street (2,275.25 feet of 18-inch diameter sewer), furnishing an outlet for sewers in the large area between Belt road and River road. The separate system trunk sewer along Beach drive as far as Military road was completed (8,235.65 feet of 18-inch) and the Luzon-avenue trunk sewer (5,416 feet of 18-inch) connecting the Beach-drive sewer and the section of the Luzon-avenue trunk sewer constructed during the preceding fiscal year in the grounds of the Walter Reed Army Hospital. In Broad branch road and Pleasant drive from Broad branch to Chevy Chase, D. C., a separate system trunk sewer was constructed, 11,796.8 feet long. The drainage system of the improved area adjacent to Chevy Chase circle was connected to this trunk line, and the septic tank heretofore in use was abandoned. The Anacostia trunk sewer, which formerly discharged upon the marsh just south of the old Anacostia Bridge, was extended to the established bulkhead line of the Anacostia River. This sewer was constructed in the alignment of the old bridge, and the old piers with intervening trestles were used to support the same.

Toward the close of the year, contracts were entered into for the construction of sewers in Grant road between Nourse road and Wisconsin avenue, in Tunlaw road between Snyder's lane and Thirty-seventh street, and in New Mexico avenue between Arizona and Nebraska avenues, in Colorado avenue between Kennedy and Montague streets, in Longfellow street between Colorado avenue and Fourteenth street, and in Fourteenth street between Longfellow and Madison streets, and in Gallatin and Farragut streets between Georgia avenue and Fourteenth street.

By day labor under 41 jobs 12,489.1 feet of pipe sewer were laid in sizes from 6 inches to 24 inches and including special construction in the form of a low dam to permit an uninterrupted gravity gradient crossing Rock Creek south of Massachusetts avenue. This dam carries four lines of 24-inch diameter iron pipe which will form a section of the west side intercepting sewer. At present it carries the sewage from the valley north of R street across Rock Creek and temporarily discharges into the east side Rock Creek interceptor.

#### ASSESSMENT AND PERMIT WORK.

Under contract service sewers were constructed from the appropriation for assessment and permit work as follows: In Georgia avenue, between Emerson and Farragut streets, 390 linear feet of sewers; in Tennallytown, the Falls Branch drainage area, 3,911.9 linear feet of sewers; in Langdon, east side interceptor area, 14,315.1 linear feet of sewers; in Brookland, east side interceptor area, 3,536.8 linear feet of sewers. Toward the close of the year a contract was entered into for the construction of a service sewer in Connecticut avenue extended, and Rodman and Porter streets in Richmond Park.

By day labor 39,956.3 feet of service sewers in sizes from 8 inches diameter to 24 inches diameter and 131 manholes were constructed under 158 jobs.

At the intersection of Eastern avenue and Cedar street, in Takoma Park, an underground sewage lift was constructed to elevate the sewage collected along Eastern avenue and Cedar street so as to discharge over the divide, one side of which drains toward Maryland, to the gravity system of the District of Columbia. This makes it possible to serve a large number of residences which have heretofore had no sewer facilities. The pneumatic sewage lift is automatically controlled, and the compressed air is supplied by an air compressor, which is actuated by a Pelton water-wheel motor operated under the pressure obtained from the city water mains.

## FOURTH STREET SOUTHEAST RELIEF SEWER.

Under contract the remainder of the sewer was constructed (965 feet of 4-foot 6-inch diameter). This sewer furnishes an entirely new outlet for the large amount of surface water which collects rapidly in time of rains at the intersection of Fourth street and Pennsylvania avenue SE. The old sewer was not abandoned, but was reconstructed by inserting a new concrete sewer within the old section, and otherwise repaired. It now serves as an additional outlet for storm water and is much more sanitary than formerly.

## CLEANING AND REPAIRING SEWERS AND BASINS.

Aside from the cleaning and maintenance of a routine nature, it was necessary to construct a reenforcing arch inside the old Tiber sewer near the intersection of North Capitol and E streets. The old arch was failing under the fill made in connection with the Union Station plaza work, and endangered the large area north of Massachusetts avenue in which the Government Printing Office is located. The construction of the reenforcing arch was done inside the sewer with only a small hole for entrance and without hindering the flow of the water. The form of construction used was reenforced concrete and the steel was so placed as to form a hanging support for the sheet-steel arch plates, thus avoiding the use of ribbed centers, which would have seriously obstructed the flow during construction.

## PINEY BRANCH TRUNK SEWER.

By contract the first section of this sewer was constructed crossing Sixteenth street through the fill at the north approach to the Piney Branch Bridge. This section was 965 feet long and 9 feet 8 inches in diameter.

No work by day labor was done during the year under this appropriation.

## PERMIT SYSTEM

Under the permit system by contract the West Brightwood trunk sewer was completed from Thirteenth and Hamilton streets to Fourteenth and Kennedy streets; 2,230 linear feet were constructed, 4 feet 3 inches, 4 feet, and 3 feet 6 inches in diameter. In a right of way from Broad Branch road to Connecticut avenue south of Legation street, 1,133 feet of separate system trunk sewer were constructed. Toward the close of the year work was started on sewers in the following streets of West Petworth, Iowa avenue, Allison street, Buchanan street, and Webster street. This contract will be completed in the next fiscal year.

By day labor under 40 jobs, 9,015.9 feet of sewer, from 6 inches to 24 inches in diameter, and 35 manholes were constructed. A section of the West Brightwood trunk sewer, 795.55 feet in length, was constructed along Hamilton street. This section was constructed of reenforced concrete with heavy lines, in prospect of a heavy fill being placed upon it immediately after its completion.

## MISCELLANEOUS TRUST FUNDS DEPOSITS.

Under contract the Nebraska avenue separate system trunk sewer was constructed from Broad Branch road to Connecticut avenue (1,320.8 feet of 18-inch diameter sewer.) This sewer will furnish an outlet for drainage along Connecticut avenue between Chapel road and Harrison street, as well as for the area north and east of the Reno reservoir.

By day labor, under 61 jobs, were constructed 4,474 feet of sewer, varying in size from 6 to 24 inches and 13 manholes. Also there were constructed 30 basins.

## ELIMINATION OF GRADE CROSSINGS.

By day labor 10-inch diameter and 12-inch diameter sewers were constructed, aggregating 453 feet in length; also 3 new manholes were constructed and one adjusted. There were 10 new basins constructed, 4 old basins reconstructed and 3 abandoned. This work was done under nine jobs.

## SEWAGE DISPOSAL SYSTEM.

Under contract, from unused balances, the south branch of the Water and L street intercepting sewer was constructed along Water street SW., from L to P streets; length, 2,039 linear feet of sizes 12 inches and 15 inches.

Also, under contract, from the appropriation for the east side interceptor, boundary to Brookland, sections F and G, requiring 1,985.3 linear feet of 4-foot 3-inch diameter sewer, were completed. Section E in tunnel under the Rhode Island avenue divide was constructed from Franklin street as far as Rhode Island avenue by the close of the year. This section will extend to Twentieth and Monroe streets NE., and will afford an outlet for service sewers in a very large area north of Rhode Island avenue.

*DIVISION D.—Operation and construction, sewage disposal system.*

The work of this division includes engineering and supervision of special construction and operation and the maintenance of the sewerage pumping station and the sewage-disposal system, and the management of repair shops, stores, and yards.

*Sewerage pumping station.*—Among the minor installations and betterments during the year at the sewerage pumping station were the steam-heating system for first, second, and third floor shops; water piping for fire service in storerooms and shops; three automatic recording level indicators constructed and installed for recording lifts on the pumping service; a recording speed indicator on Class 1 pumping engines; a hot-water meter on boiler feed line; and a sheet-metal plate-bending roller and one bar-iron shear for the blacksmith shop.

The sewerage pumping station was operated without interruption of service throughout the year, handling the sewage of substantially the entire District, and delivering same to the outfall at Grimes on the Potomac River. In addition, the entire rainfall of the low area was pumped and the fixed hydraulic gradients for this service were maintained during the year. The total amount pumped was 821,000,000 gallons of storm water, and of sewage 25,049,683,000 gallons. The following tabulation shows the monthly quantities pumped:

*Table showing total pumpage for each month of the fiscal year.*

Month.	Sewage.	Storm water.
	<i>Gallons.</i>	<i>Gallons.</i>
July.....	2,163,707,000	35,990,000
August.....	2,103,598,000	60,980,000
September.....	2,055,120,000	86,580,000
October.....	2,114,200,000	21,310,000
November.....	1,958,190,000	23,750,000
December.....	2,097,150,000	87,850,000
January.....	2,173,317,000	107,490,000
February.....	1,863,820,000	54,770,000
March.....	2,143,681,000	13,930,000
April.....	2,100,210,000	129,940,000
May.....	2,163,490,000	81,830,000
June.....	2,113,200,000	116,580,000

Duty trials were run during the year on the 75-kilowatt generator engines furnished by the Shepherd Engineering Company under contract 4300. These engines successfully met all the contract requirements.

Eight million eighteen thousand four hundred pounds of coal were consumed, and there were used 335 gallons of cylinder oil, 1,265 gallons of engine oil, 168 gallons of miscellaneous oils, 1,055 pounds of engine grease, 1,754 gallons of illuminating oil, and 1,795 gallons of gasoline, the two latter items including the oil and gasoline required and used for all purposes for the sewer department during the year; 2,567 pounds of new cotton waste were used, 2,590 pounds of waste were washed and reused, and 247 gallons of reclaimed oil from cotton waste were also used.

*Construction.*—The following special construction forms part of the work of this division for the year:

Takoma Park substation constructed at Eastern avenue and Cedar street and pneumatic sewage lift installed and operated, and same designed and equipped with an automatic control for jacket water and an oiling system on air compressor and on ejector for disposing of seepage into chamber. Tests were also run on the above equipment.

One 18 by 24 inch rectangular flushing gate was also installed on the east-side interceptor at Hickeys Run.

One 4 foot 6 inch by 7 foot rectangular sluice gate on storm-water outlet of B street and New Jersey avenue trunk sewer was installed at the foot of New Jersey avenue SE., for use in flushing conduits at the sewerage pumping station and the outfall.

A recording gauge was installed in the gate chamber of the west-side interceptor at Rock Creek near Massachusetts avenue.

Tide gates were installed on the Sixteenth street storm-water sewer at the tidal basin.

Tide gates on storm-water outlet of Tiber Creek and New Jersey avenue high-level interceptor were reconstructed.

One 60-inch sluice gate was installed on the Rock Creek and B street intercepting sewer on the west dike lines at Seventeenth and B streets NW., at the junction with the B street trunk sewer.

*Shops and yards.*—Electric hoists used on reconstruction in tunnel of sewer on Fourteenth street between New York avenue and H street NW. were erected, operated, and maintained, and all concrete forms used on this work constructed and erected, and all reinforcing irons cut and bent. The sheet-metal arch forms used on the Tiber sewer at North Capitol and E streets were constructed and all reinforcing irons bent, and the wooden concrete forms constructed and erected. All cleaning and emergency wagons belonging to the department were maintained during the year. The special reinforced concrete manufactured for sewer construction included considerable concrete pipe and artificial stone tops for the storm-water receiving basins as follows: One hundred and thirty-one standard corner tops, 129 standard side tops, ten 15-inch radius tops, ten 25-inch radius tops, fourteen 3 foot 6 inch square tops, 690 cheek blocks, 268 drip stones, and 224 concrete invert blocks, and semicircular concrete pipe as follows: Sixty linear feet of 18-inch diameter, 66 linear feet of 21-inch diameter, and 2,686 linear feet of 24-inch diameter.

Tools and miscellaneous supplies for the use of the sewer division were handled at the sewerage pumping station with the storekeeper in charge of the stores and yard. Here all such supplies were received, inspected, and issued. Records are kept on the card system and quarterly reports made covering receipts and issues, the return of unexpendable property, and unserviceable property for condemnation and sale.

#### DIVISION E.—*Maps, records, and drafting.*

The official set of 50-foot scale maps of the sewerage of the District of Columbia has had 58 old and worn sheets replaced by new maps. A set of Van Dyke prints has been completed from the new set of 188 sheets showing the building lines, curbs, and street railways, and on these there has been platted all gas mains of the city. This is now the most complete record of gas mains in the possession of the District. Many tracings of sewer maps were made for the counter books of the permit clerk and sewer department, to replace worn-out tracings. Plans, estimates, and specifications have been prepared for sewer construction under 33 contracts. About 400 plats have been prepared to accompany engineer department files for the extension of main and pipe sewers, for relaying defective sewers, and for the construction and reconstruction of catch basins. One-hundred-foot scale maps covering various portions of the suburban districts have been prepared for use in detailed studies of drainage. A number of detailed plans and drawings have been prepared for special work. Thirty-three deeds, together with the accompanying plats, have been prepared for acquiring rights of way.

Work has been begun in rearranging and indexing the sewer grade sheets, numbering about 8,400. Also work has been begun on revising the card index for grade sheets. This file contains about 10,000 cards. By this revising and rearrangement, the handling of grade sheets will be greatly simplified and there will be less wear and tear. Also work is in progress on a card index system for catch basins, numbering about 4,600. Complete information appears on these cards, such as location, type, and condition of basin, connection, seal, top, and the nature of the paving.

#### DIVISION F.—*Underground construction, public-service corporations.*

While there was a noticeable falling off in the mileage of electric conduits and gas mains laid during the year, the electric conduits being only about 70 per cent and gas mains about 90 per cent of the lengths constructed in the fiscal year 1909, the wide dispersion of this work over the District, extending from the extreme westerly to the extreme easterly limits, has required the expenditure of fully as much time for the work for inspection, location, and record as in the previous year. In addition to the regular work of locating construction as it proceeds, something was accomplished toward improving the records of the work of previous years.

The cost of the necessary field inspection on this work is prorated each month among the various companies on the basis of the amount of work for each for the month, and charged against their several deposits, and each company is furnished with a detailed monthly statement showing the charge against each location on which work was in

progress during the month. The monthly aggregate of these charges is tabulated as follows:

*Charges for inspection of underground construction by public-service corporations.*

Public-service corporations.	July.	August.	September.	October.	November.	December.
Washington Railway and Electric Co.			\$1.67	\$3.25	\$7.53	
Capital Traction Co.	\$13.00	\$16.06				\$1.00
Chesapeake and Potomac Telephone Co.	32.02	49.56	34.55	39.83	75.56	57.34
Western Union Telegraph Co.	.28			4.20		
Washington Gas Light Co.	114.72	136.29	85.54	108.30	89.58	81.62
Georgetown Gas Light Co.	8.65					60.14
Potomac Electric Power Co.	48.33	45.09	115.74	91.42	52.33	48.90
Total.....	217.00	247.00	237.50	247.00	225.00	249.00

Public-service corporations.	January	February.	March.	April.	May.	June.	Total.
Washington Railway and Electric Co.				\$1.00	\$4.00	\$1.00	\$18.45
Capital Traction Co.					1.00		31.06
Chesapeake and Potomac Telephone Co.	\$50.84	\$68.24	\$42.14	48.64	56.88	46.60	602.20
Western Union Telegraph Co.							4.48
Washington Gas Light Co.	67.47	78.69	163.15	94.25	104.37	171.10	1,295.08
Georgetown Gas Light Co.	3.38						72.17
Potomac Electric Power Co.	62.81	67.82	92.71	118.36	124.00	114.49	982.00
Postal Telegraph-Cable Co.						2.94	2.94
Washington Market Co.					5.00		5.00
Total.....	184.50	214.75	298.00	262.25	295.25	336.13	3,013.38

A detailed statement of the construction of the various companies is given in Tables 16, 17, 14, and 15, which also show a summary of electric conduits, gas mains, etc., laid to date.

*DIVISION G.—Records and accounts.*

The work of this division consists of the preparation of pay rolls, requisitions, transfer vouchers, statements of cost of construction, job cost records, checking and recording of vouchers, transmission of papers, etc. The following is a brief summary of the work for the year:

Number of jobs.....	1,174
Foremen's reports checked, recorded, and filed.....	7,748
Card record.....	7,157
Bills checked, recorded, and passed.....	1,296
Pay rolls prepared.....	482
Requisitions.....	1,160
Transfer and refund vouchers.....	237
Tool orders.....	563

**RIGHTS OF WAY ACQUIRED DURING THE FISCAL YEAR ENDED JUNE 30, 1910.**

Anacostia main interceptor through parcels 169/10,<sup>a</sup> 169/12,<sup>a</sup> 170/1,<sup>a</sup> 177/2,<sup>a</sup> 177/6,<sup>a</sup> 178/2,<sup>a</sup> 184/7,<sup>a</sup> 184/9,<sup>a</sup> and 185/4.<sup>a</sup>

Dahlia and Eighth street separate system service sewer (Luzon avenue trunk), through parcels 103/18,<sup>b</sup> and 103/19.<sup>b</sup>

West side Rock Creek interceptor through square 2508, parcels 52/1,<sup>b</sup> 52/7,<sup>a</sup> 52/12,<sup>a</sup> and 53/3.<sup>b</sup>

S street combined system service sewer (valley north of R street) temporary outlet, through parcel 36/16.<sup>b</sup>

Piney Branch trunk sewer through parcel 85/9.<sup>b</sup>

Jefferson street separate system service sewer (Piney Branch trunk) through parcel 100/2.<sup>b</sup>

Separate system service sewer for lots 1 and 2 of square 2073 (Klinge Ford trunk) through parcel 42/50.<sup>b</sup>

Nebraska avenue trunk sewer separate system (Broad Branch trunk) through parcels 46/6<sup>b</sup> and 47/13.<sup>b</sup>

<sup>a</sup> Condemnation.

<sup>b</sup> Voluntary dedication.

Separate system outlet sewer for Keokuk and Kanawha streets (Broad Branch trunk) through parcels 47/13 *b* and 47/14.<sup>a</sup>

Separate system outlet sewer for Connecticut avenue (Broad Branch trunk) through lot 2 of square 1869 *b* and parcel 47/21.<sup>a</sup>

Lawrence street separate system service sewer (east side interceptor) through parcel 156/21.<sup>a</sup>

Twentieth street separate system service sewer (east side interceptor) through parcels 156/21 *b* and 156/22.<sup>a</sup>

Kearney street separate system service sewer (east side interceptor) through parcel 156/22.<sup>a</sup>

Douglas street separate system service sewer (east side interceptor) through parcel 164/22.<sup>a</sup>

West Virginia avenue separate system service sewer (east side interceptor) through lot 1 of square 4284.<sup>a</sup>

Combined system service sewer for lots 113, 114, and 115 of square 4544 (northeast boundary) through lots 113, 114, and 115 of square 4541.<sup>a</sup>

## TABLES.

Table No. 1.—Construction by contract.

Table No. 2.—Construction by day labor, permit system.

Table No. 3.—Construction by day labor, assessment system.

Table No. 4.—Construction by day labor, miscellaneous trust funds deposits.

Table No. 5.—Construction by day labor, main and pipe sewers.

Table No. 6.—Construction by day labor, suburban sewers.

Table No. 7.—Construction by day labor, elimination of grade crossings.

Table No. 8.—Construction by day labor, sewage disposal system construction.

Table No. 9.—Construction by day labor, miscellaneous appropriations.

Table No. 10.—Inspectors and other temporary employees and appropriations from which paid.

Table No. 11.—Average cost of day labor, sewer, and basin construction.

Table No. 12.—Average cost of pipe sewers for ten years.

Table No. 13.—Summary of sewerage system for twenty years.

Table No. 14.—Electric conduits laid during the year.

Table No. 15.—Gas mains laid during the year.

Table No. 16.—Summary of electric conduits laid to June 30, 1910.

Table No. 17.—Summary of gas mains laid to date.

*Lengths of main sewers and pipe sewers and number of storm-water basins constructed from funds appropriated for the fiscal year 1910.*

Appropriation.	Main sewers.	Pipe sewers.	Storm- water basins.
	<i>Linear ft.</i>	<i>Linear ft.</i>	
Assessment and permit work.....	3,854.6	69,148.8	1
Miscellaneous trust funds deposits.....		4,473.9	11
Main and pipe sewers.....	3,465.4	4,958.4	84
Suburban sewers.....	777.0	45,165.6	
Fourth street se. relief sewer.....	965.0	210.0	
Piney Branch trunk sewer.....	948.9		
Elimination grade crossings.....		453.0	14
Sewage disposal system.....	6,388.3		
Miscellaneous work.....		3,599.5	68
Total.....	16,399.2	128,009.2	178

## RECAPITULATION.

Total length of sewers on June 30, 1910:	Miles.
Main sewers.....	119.20
Pipe sewers.....	448.78
Total.....	567.98
Cost of sewerage system June 30, 1910.....	\$10,860,556.62
Cost of sewage-disposal system to June 30, 1910.....	4,095,630.70

Very respectfully, your obedient servant,

ASA E. PHILLIPS,  
Superintendent.

Capt. E. M. MARKHAM,  
Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner, District of Columbia.

<sup>a</sup> Voluntary dedication.

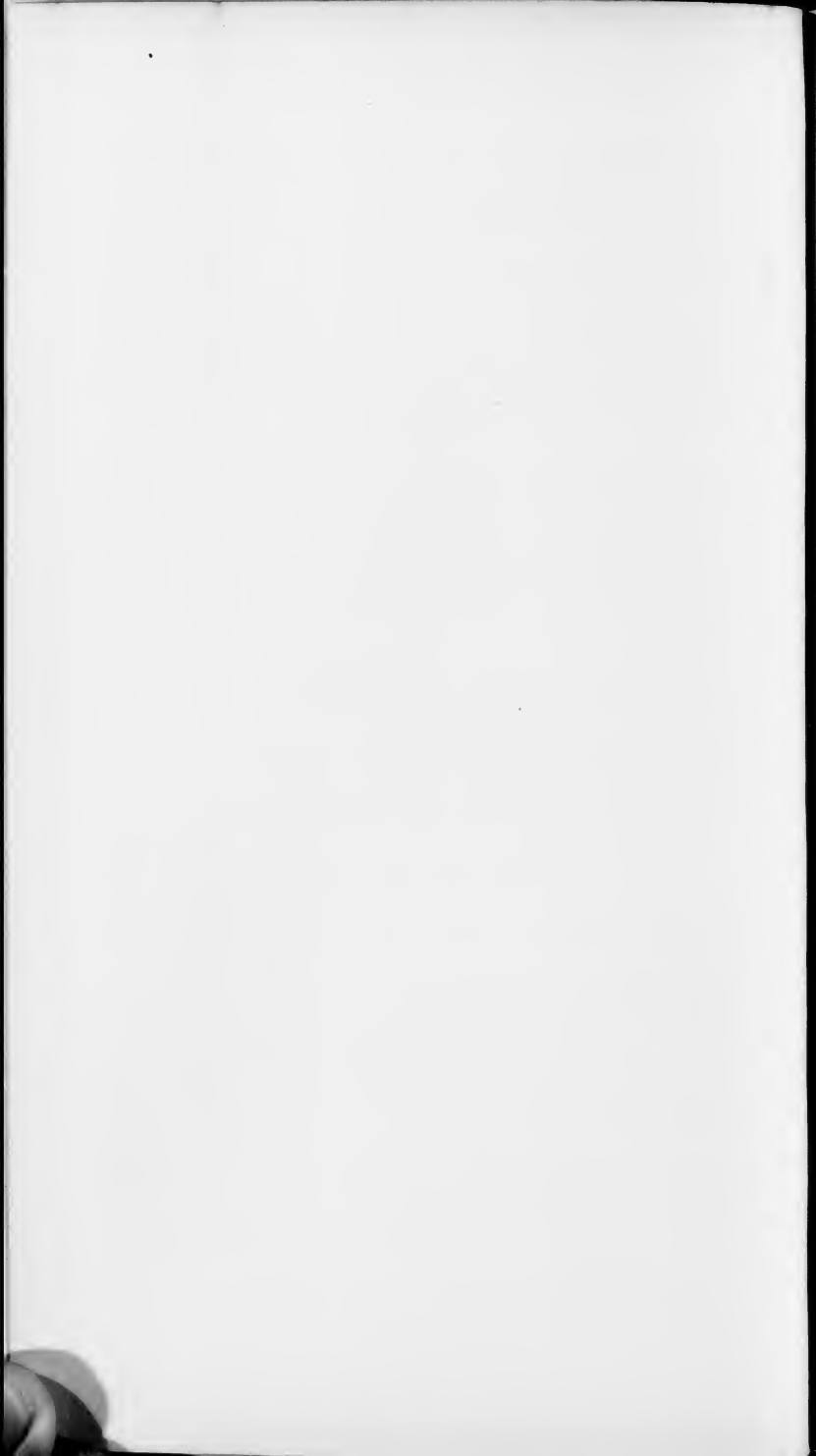




TABLE No. 1.—Statement of sewers constructed

No. of contract.	Contractor.	Location.	Pipe sewers constructed			
			6-inch (underdrain).	10-inch.	12-inch.	15-inch.
			Feet.	Feet.	Feet.	Feet.
4352	W. F. Brenizer Co. <i>a h</i>	Valley north of R street, between Rock Creek and Observatory lane.				
4354	George Hyman <i>a</i>	Third street, between North Carolina and South Carolina avenues; South Carolina avenue, between Second and Third streets; Second street, between South Carolina and Virginia avenues.	210			
4356	W. F. Brenizer Co. <i>a</i>	Davenport street, between River road and Forty-third street; and Forty-third street, between Davenport and Fessenden streets.				
4364	E. G. Gummel <i>a</i>	Beach drive, between Broad Branch and Military road.				
4378 "B"	do. <i>b</i>	River road, Chester street, and Wisconsin avenue.		1,660.5		
4378 "C"	do. <i>b</i>	Fessenden, Forty-first, and Davenport streets and Belt road.		1,102	495	
4378 "D"	do. <i>b</i>	Twenty-sixth street, between Evaris and Irving streets; Irving street, between Twenty-fourth and Twenty-sixth streets; Twenty-fourth street, between Irving street and Rhode Island avenue.		1,134.5	914.45	804
4381	Warren F. Brenizer Co. <i>b</i>	Missouri avenue, between Third and Sixth streets; Four-and-a-half street, between Maine and Missouri avenues.	1,053			
4382	do. <i>b</i>	Military road and Rock Creek to Army General Hospital.				
4384	do. <i>b</i>	Broad Branch road and Pleasant drive, between Soapstone Branch and McKinley street.			2,558.45	60
4503	R. J. Beall Construction Co.	Farragut, Thirteenth, Hamilton, and Fourteenth streets.				
4517	W. F. Brenizer Co.	Piney Branch Valley, between Fourteenth and Sixteenth streets.				
4518	do.	Line old Anacostia Bridge, from foot Good Hope road to bulkhead line.				
4529 "A"	E. G. Gummel	Douglas, Twenty-second, Channing, and Twenty-fourth streets.		587.8	442.9	1,184.5
4529 "B"	do.	Evaris street ne., between Mills avenue and Queen Chapel road.		911.45	297.4	
4529 "C"	do.	Girard street, between Twenty-sixth and Vista streets; Vista street, between Girard street and South Dakota avenue; and South Dakota avenue, between Vista and Carlton streets.		662.7	880.3	
4529 "D"	do.	South Dakota avenue, between Carlton street and Rhode Island avenue.		1,085.6		
4529 "E"	do.	Woodridge street ne., between Twenty-second and Twenty-fourth streets.		285.8		
3529 "F"	do.	Twenty-fourth street, between Woodridge street and Rhode Island avenue; Rhode Island avenue, between Woodridge street and Mills avenue.		508.5		
4529 "G"	do.	Mills avenue ne., between Franklin and Irving streets.		630.9	445.38	413.42
4529 "H"	do. <i>d</i>	Jackson street, between E. S. I. and Eighteenth street; Eighteenth street, between Jackson street and Fort drive.		1,155.47	305.6	
4529 "I"	do. <i>d</i>	Hamlin street, between Twenty-fifth and Twenty-sixth streets ne.; and Twenty-fifth street, between Hamlin and Irving streets.		616.61		
4384	W. F. Brenizer Co. <i>c</i>	Right of way, between Broad Branch road and Connecticut avenue.			1,133	
4553 "A"	George Hyman <i>d</i>	Douglas street ne., between Twenty-sixth street and Bladensburg road; and Bladensburg road, between Douglas street and National Training School for Boys.		947.97	531.25	
4553 "B"	do. <i>e</i>	Eighteenth and Twentieth streets, between Jackson and Lawrence streets; Lawrence street, between Eighteenth and Twentieth streets ne.			725	898
4556	W. F. Brenizer Co. <i>e</i>	Buchanan street, Iowa avenue, Webster street, and alley of square No. 2817.				630
4557	do. <i>e</i>	Nebraska avenue, between Pleasant drive and Connecticut avenue.				
4583	do. <i>f</i>	Grant road, between Nourse road and Wisconsin avenue.				
4584 "A"	do. <i>f</i>	Tunlaw road, between Thirty-seventh and Snyders lane.				
4584 "B"	do. <i>f</i>	New Mexico avenue, between Arizona and Nebraska avenues.				
4585 "A"	do. <i>f</i>	Colorado avenue, Longfellow street, Fourteenth street, and Piney Branch road.				
4585 "B"	do. <i>f</i>	Farragut street, between Thirteenth and Fourteenth streets; and Gallatin street, between Georgia avenue and Fourteenth street.				
4586	do. <i>g</i>	Connecticut avenue, between Ordway and Porter streets; and Porter street, between Connecticut avenue and Reno road.				
4610 "A"	do. <i>f</i>	E street nw., between Twenty-fifth and Twenty-sixth streets.				
4610 "B"	do. <i>f</i>	F street sw., between Third and Four-and-a-half streets.				
4610 "C"	do. <i>f</i>	A street ne., between Sixth and Seventh streets.				
4610 "D"	do. <i>f</i>	Second street ne., between B and C streets.				
4610 "E"	do. <i>f</i>	Alley of square No. 400.				
4610 "F"	do. <i>f</i>	C street ne., between Ninth and Tenth streets.				
4610 "G"	do. <i>f</i>	Alley of square No. 395.				
4610 "H"	do. <i>f</i>	I street ne., between Tenth and Eleventh streets.				
4611	do. <i>f</i>	Twelfth street nw., between B and C streets.				
4611	John Miller & Co. <i>f</i>	Anacostia River front sewerage pumping station, Potomac River at outfall, Grimes wharf.				
			1,263	11,289.8	8,728.73	3,989.92

*a* Includes work previously reported in 1909 table.*b* Contracts awarded in fiscal year 1909.*c* Contingent charge of \$68.05 not included.*d* Cost of repairs to pavements not yet reported.*e* Work completed in fiscal year.*f* Work not started in fiscal year.*g* Work started; no allowance.

TABLE No. 1.—Statement of sewers constructed under contract, fiscal year ended June 30, 1910.

No. of contract.	Contractor.	Location.	Pipe sewers constructed.							Trunk sewers constructed.	Allowance to contractor.	Materials.		Cost of—		Total cost.	Appropriation.
			6-inch (underdrain).	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.			Charged.	Not charged.	Inspection.	Repairs to pavements.		
			Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.								
4332	W. F. Brenizer Co. <sup>a</sup>	Valley north of R street, between Rock Creek and Observatory lane.									\$6,205.60	\$1,130.64	\$2,267.90	\$188.00		\$9,792.14	Suburban sewers, 1910.
4334	George Hyman <sup>a</sup>	Third street, between North Carolina and South Carolina avenues; South Carolina avenue, between Second and Third streets; Second street, between South Carolina and Virginia avenues.	210							965 feet of 4-foot 6-inch.	10,572.74	29.79	3,620.55	444.00	\$2,133.06	16,800.14	Fourth street sec., relief sewer.
4356	W. F. Brenizer Co. <sup>a</sup>	Davenport street, between River road and Forty-third street; and Forty-third street, between Davenport and Fessenden streets.					1,610.8				2,863.37	382.69	671.67	104.00		4,021.73	Suburban sewers, 1909.
4357	E. G. Gummel <sup>a</sup>	Beach drive, between Broad Branch and Military road.					8,235.65				9,073.61	1,460.48	3,221.72	264.00	376.16	14,395.97	Do.
4358	do. <sup>b</sup>	River road, Chester street, and Wisconsin avenue.		1,600.5							2,093.11	252.30	280.60	110.00	65.62	2,801.63	Assessment and permit, 1909.
4359	do. <sup>c</sup>	Fessenden, Forty-first, and Davenport streets and Belt road.		1,102	495		654.45				3,114.52	448.00	556.86	118.00	11.58	4,248.96	Assessment and permit, 1910.
4359	do. <sup>d</sup>	Twenty-sixth street, between Evaris and Irving streets; Irving street, between Twenty-fourth and Twenty-sixth streets; Twenty-fourth street, between Irving street and Rhode Island avenue.		1,134.5	914.45	804					4,292.85	511.57	720.98	212.00	194.25	5,931.65	Assessment and permit, 1909.
4381	Warren F. Brenizer Co. <sup>b</sup>	Missouri avenue, between Third and Sixth streets; Four-and-a-half street, between Maine and Missouri avenues.	1,053							908.1 feet of 4-foot 6-inch diameter.	11,729.64	4,225.81	116.38	408.00	1,131.53	17,611.36	Main and pipe sewers, 1909.
4382	do. <sup>b</sup>	Military road and Rock Creek to Army General Hospital.					5,416			1,395.12 feet of 2.5 by 3.75 foot.	6,016.20	840.34	2,250.34	228.00		9,943.88	Suburban sewers, 1909.
4384	do. <sup>c</sup>	Broad Branch road and Pleasant drive, between Soapstone Branch and McKinley street.			2,558.45	60	9,109.4				11,617.86	1,647.50	4,414.48	244.00		17,923.84	Do.
4393	R. J. Beall Construction Co.	Farragut, Thirteenth, Hamilton, and Fourteenth streets.								1,297 feet of 4-foot 3-inch diameter.	11,717.48	3,392.33	79.20	548.00		15,737.01	Assessment and permit work, 1910; one-half cost to Lynchburg Investment Co.
4517	W. F. Brenizer Co.	Piney Branch Valley, between Fourteenth and Sixteenth streets.								684 feet of 4-foot diameter.							
4518	do.	Line old Anacostia Bridge, from foot Good Hope road to bulkhead line.								349 feet of 3-foot 6-inch diameter.							
4519	E. G. Gummel.	Douglas, Twenty-second, Channing, and Twenty-fourth streets.		587.8	442.9	1,184.5				800.5 feet of 9-foot 9-inch diameter.	2,931.71	300.00	639.08	110.00		3,980.79	Suburban sewers, 1910.
4520	do.	Evaris street ne., between Mills avenue and Queen Chapel road.		911.45	297.4					148.4 feet of 10 by 10 foot diameter.	1,248.72	123.00	53.78	96.00		1,717.15	Do.
4520	do.	Girard street, between Twenty-sixth and Vista streets; Vista street, between Girard street and South Dakota avenue; and South Dakota avenue, between Vista and Carlton streets.		662.7	880.3					320 feet of 4-foot diameter.	1,443.45	165.00	341.71	30.00		1,980.16	Assessment and permit, 1910.
4520	do.	South Dakota avenue, between Carlton street and Rhode Island avenue.		1,085.6						457 feet of 4 by 4-foot diameter.							
4520	do.	Woodridge street ne., between Twenty-second and Twenty-fourth streets.		285.8							1,093.62	118.80	201.70	24.00		1,438.12	Do.
4520	do.	Twenty-fourth street, between Woodridge street and Rhode Island avenue.		508.5							200.60	27.00	53.78	14.00		355.38	Do.
4520	do.	Rhode Island avenue, between Woodridge street and Mills avenue.									362.90	52.50	95.85	8.00	97.13	616.38	Do.
4520	do.	Mills avenue ne., between Franklin and Irving streets.		630.9	445.38	413.42					1,783.80	189.00	377.99	104.00		2,454.79	Do.
4520	do.	Jackson street, between E. S. I. and Eighteenth street; Eighteenth street, between Jackson street and Fort drive.		1,155.47	305.6						1,341.91	157.50	298.86	40.00		1,838.27	Do.
4520	do.	Hamlin street, between Twenty-fifth and Twenty-sixth streets ne.; and Twenty-fifth street, between Hamlin and Irving streets.		616.61							611.41	64.50	116.29	26.00		818.20	Do.
4384	W. F. Brenizer Co. <sup>c</sup>	Right of way, between Broad Branch road and Connecticut avenue.			1,133						969.68	112.50	238.79	40.00		1,360.97	Assessment and permit, 1910; one-half cost to Fulton R. Gordon.
4533	George Hyman <sup>d</sup>	Douglas street ne., between Twenty-sixth street and Bladensburg road; and Bladensburg road, between Douglas street and National Training School for Boys.		947.97	531.25						1,826.09	150.39	314.58	105.00		2,396.06	Assessment and permit, 1910.
4533	do.	Eighteenth and Twentieth streets, between Jackson and Lawrence streets; Lawrence street, between Eighteenth and Twentieth streets ne.			725	898					1,109.24	154.13		63.00			
4536	W. F. Brenizer Co. <sup>e</sup>	Buchanan street, Iowa avenue, Webster street, and alley of square No. 2817.				630					968.58	148.50		33.50			Assessment and permit, 1910; one-half cost to Fourteenth Street Heights Land Co.
4537	do.	Nebraska avenue, between Pleasant drive and Connecticut avenue.					1,313.75				1,683.01	143.33	554.31	32.50		2,533.81	Whole cost to Thos. J. Fisher Co.
4583	do.	Grant road, between Nourse road and Wisconsin avenue.															Suburban sewers, 1910.
4584	do.	Tunlaw road, between Thirty-seventh and Snyders lane.															Do.
4585	do.	New Mexico avenue, between Arizona and Nebraska avenues.															Do.
4585	do.	Colorado avenue, Longfellow street, Fourteenth street, and Piney Branch road.															Do.
4585	do.	Farragut street, between Thirteenth and Fourteenth streets; and Gallatin street, between Georgia avenue and Fourteenth street.															Do.
4586	do.	Connecticut avenue, between Ordway and Porter streets; and Porter street, between Connecticut avenue and Reno road.															Do.
4610	do.	E street nw., between Twenty-fifth and Twenty-sixth streets.															Do.
4610	do.	F street sw., between Third and Four-and-a-half streets.															Do.
4610	do.	A street ne., between Sixth and Seventh streets.															Do.
4610	do.	Second street ne., between B and C streets.															Do.
4610	do.	Alley of square No. 400.															Do.
4610	do.	C street nw., between Ninth and Tenth streets.															Do.
4610	do.	Alley of square No. 395.															Do.
4610	do.	I street ne., between Tenth and Eleventh streets.															Do.
4610	do.	Twelfth street nw., between B and C streets.															Do.
4611	John Miller & Co. <sup>f</sup>	Anacostia River front sewerage pumping station, Potomac River at outfall, Grimes wharf.															Do.
			1,263	11,289.8	8,728.73	3,989.92	28,234.35	298.8	1,794.3		121,668.23	16,249.39	26,095.03	4,182.03	4,009.33	169,847.72	

<sup>a</sup> Includes work previously reported in 1909 table.<sup>b</sup> Contracts awarded in fiscal year 1909.<sup>c</sup> Contingent charge of \$88.05 not included.<sup>d</sup> Cost of repairs to pavements not yet reported.<sup>e</sup> Work completed in fiscal year 1911.<sup>f</sup> Work not started in fiscal year 1910.<sup>g</sup> Work started; no allowance to contractor.<sup>h</sup> Includes 18 feet of 24-inch cast-iron sewer.<sup>i</sup> Also 24 feet 12-inch and 45 feet 20-inch iron sewer laid.<sup>j</sup> Contingent charge of \$120.66 included in total.

TABLE NO. 2.—Statement of sewers laid under the appropriation for

No. of order.	Location.	Pipe sewers laid.						Manholes built.	Branches.
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.		
		<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		
1	Albemarle st., east of Thirtieth st. nw....	280		870.5				2	1
2	Square No. 454, right of way.....	48							3
3	Yuma street, between Forty-first street and Wisconsin avenue nw.....			445.4					3
4	Yuma street, between Forty-first and and Forty-second streets.....	274.6							4
5	Lamont st. nw., west of Eighteenth st..			100					4
6	Callan street ne., between Sixth and Seventh streets.....			289				1	6
7	Square No. 16, alley of.....	24							1
8	Fourteenth st. nw., between H and I sts.				40				1
9	Third street sw., lot No. 141.....			7.5					1
10	Alley of reservation No. 10.....	27.5							1
11	Alley of square No. 3116.....	77						1	3
12	Georgia avenue nw., between Randolph and Shepherd streets.....			170					3
13	F street sw., between Eleventh and Twelfth streets.....	106			78				2
14	Twelfth st. sw., between E and F sts....	73			107				4
15	Canal street sw., north of O street.....					150			1
16	B street nw., between Twelfth and Thirteenth streets.....				62			1	1
17	Kalorama road, lot No. 20, square No. 2553.....			21.3					1
18	Georgia avenue nw., between Park road and Newton street.....	131						1	1
19	Rhode Island avenue nw., between North Capitol and W streets.....			155				1	5
20	Eighth street nw., between Webster and Allison streets.....	60							
21	Park road nw., between Seventeenth and Eighteenth streets.....				23.5				1
22	Connecticut avenue nw., at Twenty- fourth street.....					125		1	
23	Decatur street nw., between Thirteenth street and Georgia avenue.....	279.6					(b)	1	
24	Rhode Island avenue nw., between Sec- ond and Third streets.....				173.2			2	9
25	Third st. nw., north of Rhode Island ave.			98				1	5
26	Square No. 2920, alley of.....			350				1	
27	Fourteenth street nw., between Ran- dolph and Taylor streets.....	120		450.7				5	18
28	Thirtieth st. nw., between Q and R sts..				14				
29	Thirteenth st. and Maryland avenue ne.	148.8						1	2
30	Newark street nw., between Thirty- third place and Highland road.....	35							
31	Killbourne street nw., between Seven- teenth and Mount Pleasant streets.....			110		50		1	2
32	Cathedral avenue nw., between Twenty- third street and Woodley road.....			54					1
33	Square No. 2551, alley of.....				30				1
34	Second st. sw., between C and Canal sts.			100				1	2
35	O street, between Eighth and Ninth streets, and Ninth street between O and P streets nw.....	69			106		(b)	1	4
36	O street, between Eighth and Ninth streets, and Ninth street between N and O streets.....	93.5		105.5			(b)	1	2
38	Twelfth st. se., from E st., east side....				120				1
40	Dahlia street nw., between Seventh street and Georgia avenue.....				141.5	593.3	75.1	5	2
41	Georgia avenue nw., between Dahlia and Butternut streets.....					1,266.4	(b)	4	1
42	North Capitol st., between V and W sts..			137					1
13	Webster street nw., between Fourteenth and Fifteenth streets.....				550		(c)	1	
14	Webster street nw., between Fifteenth and Sixteenth streets.....			234.5			(c)		1
15	Square No. 161, alley of.....			84			(c)	1	
25	Square No. 175, alley of.....			260			(c)	1	10
		60	1,787	4,042.4	1,445.2	2,184.7	75.1	35	109

<sup>a</sup> Work started in fiscal year 1909.<sup>b</sup> Awaiting bill for repairs to pavements.

assessment and permit work (permit system), fiscal year ended June 30, 1910.

Amount of deposit.	Cost to—		Total cost.	Amount returned.	For whom done.	Foreman.	Date of completion.
	District of Columbia.	Depositor.					
\$1,000.00	\$1,372.34	\$1,000.00	\$2,372.34		Jesse P. Crawford.....	W. J. Ward	July 2, 1909.
40.00	21.01	21.02	42.03	\$18.99	James A. Herbert.....	do.....	July 19, 1909.
540.00	483.83	483.82	967.65	56.18	W. W. Chappell.....	do.....	Aug. 4, 1909.
90.00	55.22	55.22	110.44	34.78	Charles E. Wire.....	T. Lanigan	Aug. 6, 1909.
300.00	243.87	243.87	487.74	56.13	H. R. Howenstein.....	W. J. Ward	Sept. 27, 1909.
25.00	22.41	22.42	44.83	2.58	Standard Engineering Co ..	do.....	Dec. 3, 1909.
175.00	65.04	65.05	130.09	109.95	A. P. Clark, jr.....	T. Lanigan	Do.
15.00	4.99	4.99	9.98	10.01	Edw. J. O'Neill.....	do.....	Sept. 13, 1909.
40.00	28.61	28.61	57.22	11.39	John A. Luttrell.....	do.....	Nov. 4, 1909.
100.00	92.35	92.36	184.71	7.64	Julian P. Dodge.....	W. J. Ward	Jan. 5, 1910.
175.00	125.29	125.29	250.58	49.71	William Miller.....	T. Lanigan	Nov. 3, 1909.
140.00	91.64	91.65	183.29	48.35	Washington Market Co.....	W. J. Ward	Apr. 6, 1910.
170.00	98.19	98.19	196.38	71.81	do.....	do.....	Do.
150.00	119.97	119.98	239.95	30.02	Washington Brick and Terra Cotta Co.	do.....	Nov. 6, 1909.
77.18	77.18	77.18	151.36		Francis A. Blundon.....	do.....	Apr. 6, 1910.
55.00	29.92	29.93	59.85	25.07	A. P. Clark.....	T. Lanigan	Dec. 2, 1909.
125.00	112.52	112.53	225.05	12.47	William K. Hill.....	do.....	Mar. 4, 1910.
150.00	126.50	126.50	253.00	23.50	W. L. Mantz.....	do.....	Dec. 22, 1909.
40.00	36.79	36.80	73.59	3.20	C. W. Williams.....	do.....	Jan. 10, 1910.
30.00	22.47	22.48	44.95	7.52	L. A. Breuninger.....	do.....	Jan. 21, 1910.
170.00	109.10	109.11	218.21	60.89	Sanner & Hill.....	do.....	Apr. 11, 1910.
240.00					B. F. Saul & Co.....	W. J. Ward	
225.00	181.44	181.44	362.88	43.56	C. B. Haight.....	T. Lanigan	Feb. 26, 1910.
120.00	115.04	115.04	230.08	4.96	do.....	do.....	Feb. 23, 1910.
250.00	221.32	221.33	442.65	28.68	B. F. Saul.....	W. J. Ward	Apr. 6, 1910.
800.00	373.07	373.08	746.15	426.92	G. C. Pumphrey.....	do.....	June 17, 1910.
20.00	12.72	12.72	25.44	7.28	Rebecca Alexander.....	T. Lanigan	May 4, 1910.
145.00	106.51	106.51	213.02	38.49	N. P. Grimm.....	W. J. Ward	Apr. 29, 1910.
40.00	33.83	33.83	67.66	6.17	Albert Stewart.....	do.....	July 7, 1910.
157.73	157.73	157.73	315.46		L. A. Breuninger.....	do.....	Aug. 3, 1910.
75.00	35.69	35.70	71.39	1.80	S. B. Thompson.....	do.....	June 3, 1910.
90.00	34.82	34.82	69.64	10.18	H. L. Rust.....	do.....	June 13, 1910.
110.00	69.80	69.80	139.60	40.20	Patrick Smyth.....	do.....	May 11, 1910.
190.00					L. Kolepinski.....	do.....	
195.00					do.....	do.....	
170.00	98.14	98.14	196.28	71.86	J. B. Clark & Son.....	T. Lanigan	June 3, 1910.
500.00					H. L. Thornton.....	W. J. Ward	
1,405.00					Washington and Maryland Realty Co.	do.....	
130.00	114.62	114.63	229.25	15.37	Capital Traction Co.....	T. Lanigan	June 15, 1910.
500.00	433.80	433.79	867.59	66.21	A. W. Machen.....	W. J. Ward	Aug. 23, 1909.
250.00	204.26	204.26	408.52	45.74	do.....	do.....	Do.
125.00	83.88	83.88	167.76	41.12	Sophy C. Johnson.....	T. Lanigan	Do.
355.01	355.01	355.01	710.02		John Morris.....	W. J. Ward	Aug. 10, 1909.
9,999.92	5,970.92	5,998.71	11,509.63	1,488.73			

e Work done in fiscal year 1909; report not complete in 1909 table, waiting for bill for repairs pavements.

TABLE No. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid.						
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	21- inch.	24- inch.
100	Jefferson street, between Pierce and Adams streets se. <sup>a</sup>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i> 573	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i> 30	<i>Feet.</i>
101	Wisconsin avenue, between Quebec and Porter streets <sup>a</sup>							
102	Otis place nw., east of New Hampshire avenue <sup>a</sup>		310					
103	Kent place, between Ninth and Tenth streets ne.		217					
104	B street ne., between Fifteenth and Sixteenth streets			171				
105	Carrollburg street sw., between M and N streets		300					
106	Carrollburg street sw., between M and N streets		303					
107	Park road nw., east of Eighteenth street			100				
108	Park road, abutting square No. 2607			115.7				
109	L street ne., between Ninth and Tenth streets		261.6					
110	Farragut street nw., between Sixteenth street and Iowa avenue		402					
111	Fourth and O streets nw. (northwest corner)							
113	Queen street, between West Virginia and Montello avenues		360					
114	U street se., between Sixteenth and Fendall streets			168				
117	Ninth street ne., between Kent place and I street		67.5					
118	Eleventh street nw., between Clifton and Euclid streets			344.7				
119	Sixteenth street and Kentucky avenue se.		246.6	180				
120	Seventeenth street se., abutting square No. 5612		57.2					
121	Fort Stanton drive, abutting square No. 5753	147						
122	Thirteenth street nw., between Taylor and Shepherd streets							419.1
123	Shepherd street, between Thirteenth street and Kansas avenue				621.7			
124	Shepherd street, between Kansas and Georgia avenues			652.8				
125	Kansas avenue, between Randolph and Shepherd streets		377.5					
126	Kansas avenue, between Shepherd and Taylor streets	69.8						
127	P street nw., abutting square No. 553		192					
128	Pennsylvania avenue se., and Railroad avenue		277.5	130				
129	Wisconsin avenue, between Fessenden and Garrison streets			332.2				
130	Ninth street, between B street and Massachusetts avenue ne.		99.5	44.4				
131	Thirty-first street nw., between K street and Chesapeake and Ohio Canal	226.75						
132	West side Connecticut avenue, between Calvert street and Woodley road				27			
133	Irving street, between Seventeenth and Mt. Pleasant streets nw.		80					
134	Fourteenth street se., between V and W streets			174				
135	Potomac avenue se., between Thirteenth street and Pennsylvania avenue			56				
136	Otis street, between Holmead place and Fourteenth street			494				
137	Fourteenth street nw., between Otis and Oak streets		223.3					
138	Thirty-eighth street nw., between Brandywine and Chesapeake streets				494			
139	Chesapeake street nw., between Thirty-eighth and Thirty-ninth streets			582				
140	Chesapeake street nw., between Thirty-ninth and Fortieth streets			461				

<sup>a</sup> Work begun in fiscal year 1909.

and permit work, assessment system, fiscal year ending June 30, 1910.

Manholes.		Basins.	Branches.	Cost of—				Total cost.
Built.	Rebuilt.			Material.	Labor.	Repairs to pavements.	Work by plumber.	
2				\$145.79	\$448.24	\$1.51		\$595.54
					28.02			28.02
1			1	33.51	57.57			91.08
2			12	117.20	154.71			271.91
1			5	78.72	156.80			235.52
1			28	119.34	273.97			393.31
1			30	119.75	274.59			394.34
			2	37.78	122.03			159.81
			4	44.78	149.41			194.19
2			11	121.24	251.27			372.51
1				138.10	429.97			568.07
		1		11.01	25.93			36.94
1			8	119.01	219.37			338.38
				58.22	285.56	1.90		345.68
			3	20.10	61.53			81.63
2			9	166.22	382.35	125.44		674.01
3			5	187.49	411.18			598.67
			2	57.66	143.37			201.03
				29.79	137.55			167.34
2				464.61	449.87			914.48
1				268.29	636.80			905.09
1			3	227.37	720.49			947.86
			2	95.15	192.94			288.09
			1	15.06	38.27			53.33
			2	56.63	152.87			209.50
1			10	144.74	321.56			466.30
			1	102.13	417.77	29.87		549.77
2				79.94	135.58	4.68		220.20
3			8	85.59	304.34	52.27		442.20
			1	12.07	35.50			47.47
			4	29.38	85.25			114.63
1				76.89	248.16			325.05
1			4	40.75	118.50			159.25
1			30	191.78	401.92			593.70
1			8	74.25	193.97			268.22
2			1	246.91	475.62			722.53
1				210.06	647.49	18.92		876.47
1				172.12	464.49	10.65		647.26

TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid.						
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	21- inch.	24- inch.
		<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
141	Alley of square No. 2923.....	101						
142	Fourteenth street nw., between Spring road and Perry place.....				410.6			
143	Eleventh street north from Lamont street nw.....				218			
144	Seventh street nw., between Taylor and Shepherd streets.....				400			
145	New Hampshire avenue, between Sherpherd and Randolph streets.....			325.3				
146	Alley of square No. 3501.....				298			
147	Alley of square No. 3500.....		263	137.4				
148	Tenth street ne., between Newton and Monroe streets.....		293					
149	T street ne., east of Lincoln road.....			100.4				
150	South side H street ne., between Fourteenth and Fifteenth streets.....			30				
151	East side Eleventh street nw., be- tween Park road and Monroe street.....			54.8				
152	North side D street, between Sixth street and Maryland avenue ne.....			460.7				
153	North side Maryland avenue, between Seventh and D streets ne.....			148.9				
154	Florida avenue nw., between Thir- teenth and Fourteenth streets (north side).....						150	
155	Square No. 2868, north and south alley.....				290.4			
156	Square No. 2868, east and west alley.....		433					
157	Good Hope road se., between Seven- teenth and Avalon streets.....	280.9		120				
161	F street nw., between Twenty-first and Twenty-second streets.....		57					
162	Butternut street, between Piney Branch road and Sixth street.....	287.6						
163	Chesapeake street east of Brookville road.....		143.5					
164	Alley of square No. 3500.....		86.7					
165	Shepherd street nw., between Sev- enth and Eighth streets.....		193.5					
166	Meridian street, between Fourteenth and Fifteenth streets.....		394.5					
167	River road, between Chesapeake and Brandywine streets.....		739.6					
168	Brandywine street, between River road and Wisconsin avenue.....	421.4						
169	Shepherd street nw., between Thir- teenth and Fourteenth streets.....				438			
170	Blair road, between Elder and Gera- nium streets.....	521						
171	Prospect avenue, between Lincoln road and Second street ne.....				193.5	100		
172	Prospect street ne., east from Lincoln road.....						300	
173	Prospect street ne., between Lincoln road and Second street.....					100	200	
174	Perry street nw., between Holmead place and Fourteenth street.....			417				
175	Fourteenth street nw. (east side), be- tween Otis place and Spring road.....			386				
177	Wisconsin avenue, between Fessen- den and Garrison streets.....			240				
178	Kennedy street, between Illinois ave- nue and Ninth street.....		260.8					
179	Irving street nw., between Eighteenth and Mount Pleasant streets.....			34				
180	Forty-second street and Wisconsin avenue between Davenport and Fessenden streets.....			525				
181	Wisconsin avenue, between Elliott and Chesapeake streets.....			525				
182	Wisconsin avenue, between Daven- port and Chesapeake streets.....		165.5					
183	Fessenden street, between Forty-first street and Belt road.....				290			
184	Fifth street ne., between I and K streets.....	110.3						
185	Eastern avenue, between Cedar and Chestnut streets.....	843	274					

and permit work, assessment system, fiscal year ending June 30, 1910—Continued.

Manholes.		Basins.	Branches.	Cost of—				Total cost.
Built.	Rebuilt.			Material.	Labor.	Repairs to pavements.	Work by plumber.	
			2	\$21.27	\$55.74			\$77.01
1			1	192.22	464.92			657.14
1				87.08	320.64			407.72
1			6	160.33	272.67	\$2.76		435.76
1				134.84	293.15			427.99
2				179.65	419.87			599.52
1				148.15	361.16			509.31
1			1	89.13	213.78			302.91
			5	31.76	132.77			164.53
			1	10.76	44.81	7.14		62.71
1				40.21	87.38	28.56		156.15
1				176.92	487.88	63.96		728.76
				50.15	166.20			216.35
1				128.31	230.70			359.01
1				164.56	344.90			509.46
2			11	165.84	510.37			676.21
1			7	120.11	470.17	67.20		657.48
1			3	36.63	54.94	8.48		100.05
1			5	79.80	237.92			317.72
			3	44.48	128.62			173.10
			4	26.69	82.75			109.44
			2	56.17	319.50	36.29		411.96
1			18	144.77	422.32			567.09
1			8	233.01	593.53	18.90		845.44
1			7	110.71	352.49	12.60		475.87
			1	154.65	305.65			460.30
2			14	147.05	555.44			702.49
				141.34	255.06			396.40
2				227.08	575.06	112.40		914.54
7	1			231.49	417.68			649.17
1	2			177.37	322.08			499.45
4	1			186.09	293.65			479.74
1	1			112.95	231.76	39.17		383.88
10				71.83	339.05			410.88
2	1			35.11	61.80	13.55		110.46
	2			205.80	398.25			604.05
8	2			226.16	541.30	105.26		872.72
	1			70.59	280.52			351.11
	1			159.08	347.22			506.30
4	1			41.82	112.05	42.84		196.71
	1			240.33	1,227.31	18.25		1,485.89

• 12 feet 8-inch cast-iron pipe laid.



TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid.						
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	21- inch.	24- inch.
186	Cedar street, between Eastern and Carroll avenues.....	<i>Feet.</i> 310	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
187	Reservoir street, between Thirty-fourth street and Wisconsin avenue nw.....			114				
188	Alley of square No. 1207.....		148					
189	West side of Connecticut avenue, between McKinley and Northampton streets.....		376.6					
190	Piney Branch road, between Cedar and Dahlia streets.....			45				
192	Thirty-ninth street nw., between Livingston and McKinley streets.....			28	468			
193	Thirty-ninth street nw., between Morrison and Northampton streets.....			304				
194	Shannon street se., south of Talbert street.....			150				
195	Shannon street se., south of Talbert street.....			100				
196	Twenty-ninth street nw., between Q and R streets.....		141.5					
197	Sixteenth street nw., between Fuller and Harvard streets.....				356			
198	Sixth street nw., between Lamont and Keeler streets.....					127		
199	Lamont street between Sixth street and Georgia avenue nw.....		243	240				
200	New Hampshire avenue, between Quincy and Randolph streets.....			52				
201	Fourteenth street nw., between Farragut and Emerson streets.....			140				
202	Twenty-seventh street nw., between Cathedral avenue and Garfield street.....		20.5					
203	Alley of square No. 5780.....	93.6						
204	Thirty-fourth street south from Wisconsin avenue.....			102.5				
205	West side of Wisconsin avenue between R and Thirty-fourth streets.....		148					
206	Tennessee avenue between East Capitol and B streets ne.....	120						
207	Sixth and Lamont streets nw.....					93		374.5
208	Morse street ne., between Montello avenue and Kendall Green.....			90				
209	North Carolina avenue, between Thirtieth and A streets ne.....		60.75					
210	Alley of square No. 316.....	327.5						
211	T street nw., between Thirty-fifth and Thirty-sixth streets.....			483.4	46.6			
212	Longfellow street east of Georgia avenue nw.....		136.2					
213	Forty-second street nw., between River road and Chesapeake street.....		116					
214	Wisconsin avenue (east side), between Fessenden and Davenport streets.....		168.8					
215	Jefferson street nw., between Fifth and Seventh streets.....			370				
216	Massachusetts avenue, between Decatur place and R street.....			35				
217	G street ne., between Seventh and Eighth streets.....		127.5					
218	K street ne., between Sixth and Seventh streets, and Seventh street between I and K streets.....		51.7	32.5				
219	Fifth street, between Longfellow street and Shepherd road, and Shepherd road between Fifth and Seventh streets.....		804					
220	Shepherd road, between Seventh and Madison streets.....		523.3					
221	Kalorama road, between Eighteenth street and Columbia road.....			100				
222	Newton street nw., between Eighteenth and Nineteenth streets.....			74.5				
223	Monroe street nw., between Eighteenth and Nineteenth streets.....			63				
224	Columbia road nw., between Ontario road and Seventeenth street.....		138					

and permit work, assessment system, fiscal year ending June 30, 1910—Continued.

Manholes.		Basins.	Branches.	Cost of—				Total cost.
Built.	Rebuilt.			Material.	Labor.	Repairs to pavements.	Work by plumber.	
1	3			\$411.40	\$1,266.70	\$20.34		<sup>a</sup> \$1,698.44
1				41.21	95.31	55.53		192.05
	2			98.75	217.66	59.56		375.97
1	1			123.33	304.64			427.97
1				17.79	40.51			58.30
	2			268.77	798.33			1,067.10
	1			161.43	433.40			594.83
1				50.09	140.76			190.85
1				35.90	79.57			115.47
1	1			58.62	144.25			202.87
	1			186.52	469.46			655.98
1	1			94.16	202.00			296.16
29	2			199.69	483.65			683.34
2				21.48	93.69			115.17
	1			69.41	147.44			216.85
1				6.08	21.25			27.33
2				19.04	95.79			114.83
3				36.99	81.25	23.73		141.97
4				44.86	119.52	18.72		183.10
1	1			43.33	151.12	13.44		207.89
				400.58	684.75			1,085.33
6				34.00	114.09	24.99		173.08
3				18.27	69.64			87.91
	2			129.44	473.38	88.00	\$21.84	<sup>b</sup> 690.82
				222.23	323.46	7.87		553.56
6	1			43.10	114.41	19.94		177.45
2				34.38	101.00			135.38
2				47.15	173.50			220.65
7				130.59	352.06			482.65
1				11.43	52.12	14.28		77.83
6	2			67.57	135.19	26.16		228.92
3				28.74	85.93	10.04		124.71
20	3			273.54	590.43	27.83		891.80
15	3			210.65	652.23			862.88
5	1			49.39	161.18	60.43		171.00
1	1			51.63	115.25	17.98		184.86
3				22.38	74.63			97.01
	1			53.98	184.87			238.85

<sup>a</sup> 350 feet 4-inch cast-iron pipe laid.

<sup>b</sup> 187 feet 12-inch sewer abandoned.

TABLE NO. 3.—Statement of sewers laid under the appropriation for assessment

No. of order.	Location.	Pipe sewers laid.						
		8- inch.	10- inch.	12- inch.	15- inch.	18- inch.	21- inch.	24- inch.
225	Sixteenth street nw., between Fuller and Harvard streets.	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
227	Georgia avenue nw., between Shepherd and Randolph streets.		260	201.5				
228	Ninth street nw., between Taylor and Upshur streets.		44.5					
230	Fourteenth street nw., between Otis and Perry streets.			450				
231	Eleventh street ne., between C and D streets.	28.5						
232	K street ne., between Fifth and Sixth streets.			30				
233	Trumbull street nw., between Sixth street and Georgia avenue.	160						
234	Alley of square No. 70.	18.5						
235	Twenty-ninth street nw., between Q and R streets.		168.5					
236	N street nw., west of Kirby street.	71.5						
237	U street nw., between Eighteenth and Nineteenth streets.		47.2					
240	Seventh street ne., between Lawrence and Monroe streets.		230					
241	Alley of square No. 1069.	42.7						
242	Alley of square No. 3068.			122				
243	North Capitol street, between Evarts and Franklin streets.			188				
244	Alley of square No. 373.				91			
245	Alley of square No. 886.		109	191				
246	Alley of square No. 491.	100.5						
247	Shepherd street nw., between Thirtieth and Fourteenth streets.			173				
248	Alley of square No. 2865.		338.5					
249	Rhode Island avenue, between Second and Third streets, nw.			320				
250	Alley of square No. 582.	215.5						
251	South Carolina avenue, between Sixth and Seventh streets se.			42				
252	Twenty-second street se., between R and S streets.		68					
253	Park place se., between Twenty-second and Twenty-fifth streets.		261					
254	Park place se., between Twenty-third and Twenty-fourth streets.		50					
255	Carroll street se., between Minnesota avenue and Prout street.	200						
256	Kilbourne street nw., between Seventeenth and Eighteenth streets.				20			
257	Wisconsin avenue, between R and S streets, etc.		524.8					
258	Kansas avenue nw., between Webster and Allison streets.		50					
259	Seventeenth street nw., between Euclid and Kalorama streets.		97.3					
260	Georgia avenue nw., between Sheridan and Tuckerman streets.			26				
261	Fifth street nw., north of Butternut street.		191					
262	Butternut street, between Blair road and Sixth street.		271.2	786.45				
263	Twenty-second street nw., between M and N streets.		108					
264	Kanawha street, between Connecticut avenue and Thirty-seventh street.		440					
268	Piney Branch road, between Blair road and Dahlia street.		200					
269	Georgia avenue, between Butternut and Whittier streets.			140.5				
271	Dahlia street nw., between Eighth street and Piney Branch road.		350	290.7				
273	Adams street nw., between North Capitol and First streets.		480					
209	Eleventh street nw., north of Harvard street.		161.5					
274	Eastern avenue, between Cedar and Chestnut streets.							
	Total.	4,523.2	14,596.9	13,567.8	4,661.9	420	680	793.6

<sup>a</sup> Waiting for bill for repairs, pavements.<sup>b</sup> Work completed in fiscal year 1911.

and permit work, assessment system, fiscal year ending June 30, 1910—Continued.

Manholes.		Basins.	Branches.	Cost of—				Total cost.
Built.	Rebuilt.			Material.	Labor.	Repairs to pavements.	Work by plumber.	
	1			\$122.30	\$407.12			\$529.42
6	2			106.94	342.46	\$36.04		485.44
2	1			34.24	55.15	4.20		93.59
8	2			200.91	461.74			662.65
1				7.59	37.80	11.07		56.46
1				12.57	46.87	3.70		63.14
2	2			61.60	185.14	17.19		263.93
1				6.51	15.12	1.67		23.30
8	1			59.83	174.82			234.65
2				16.40	58.68	.69		75.77
2				9.68	82.50			92.18
1	1			88.15	273.38	87.43		448.96
2	1			24.43	63.43	9.46		97.32
3	1			84.04	247.89	168.01		499.94
8	2			180.36	283.82			464.18
5	1			113.02	202.24	84.57	\$20.30	420.11
20	3			168.36	370.49			538.75
7	1			37.64	101.69	46.47		185.80
17	2			160.75	292.27			453.02
9	2			141.81	355.23			497.04
6				114.90	297.39			412.29
1	1			53.18	126.45	51.47		231.10
2				16.82	48.32	5.38		70.52
1				18.10	48.76			66.86
				110.46	186.85			297.31
				79.94	68.55			148.49
	1			53.20	127.18			180.38
1				11.48	18.38	11.01		40.87
2	1			165.21	528.29	86.60		780.10
2				16.05	43.74			59.79
3				29.09	127.14	18.77		475.00
1				9.53	24.66			(a)
3				64.45	167.53			231.98
	3			437.68	810.57			1,248.25
4				42.80	114.49	33.91		191.20
2	2			150.06	346.98			597.04
1				64.76	260.87			(a, b)
2				13.78	73.75			b 87.53
	1				25.88			b 25.88
5	1			79.04	206.75			b 285.79
1	1			63.47	153.89	20.28		c 237.64
				240.00	1,225.00			1,465.00
604	132			16,550.75	42,381.55	2,009.36	42.14	60,623.88

c Work done in fiscal year 1909; report not complete in 1909 table; waiting for bill for repairs to pavements.

TABLE NO. 4.—*Statement of sewers laid under miscellane*

No. of order.	Location.	Pipe sewers laid.							
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.
1000	A street ne., between Sixteenth and Seventeenth streets.	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i> 176					
1001	First and O streets se. ....						120		
1002	Second and F streets ne. ....				21				
1003	Seventeenth and H streets nw (northeast corner) ..			6					
1004	Square No. 205, in alley .....		85						
1005	E street nw. (premises 11 to 19, inclusive) <sup>a</sup> .....								
1006	Florida avenue and Eckington place ne. (north- west and northeast).								
1007	F street, between Sixth and Seventh streets nw. ....					22			
1008	Eighth and L streets ne. (northeast and northwest corners).			12					
1009	First and B streets se. <sup>b</sup> .....		21					3	
1010	G street and Massachusetts avenue nw. (southwest corner).			21					
1011	Square No. 435, in alley .....				15				
1012	Eighth street and Pennsylvania avenue se. (north- east and northwest corners).				12				
1013	Pennsylvania avenue nw., between First and Fif- teenth streets. <sup>c</sup>								
1014	Thirteenth street nw., between Crittenden and Buchanan streets.		177						
1015	Square No. 221, in alley .....			40					
1016	Square No. 205, in alley .....		11						
1017	Square No. 931, in alley .....		94						
1018	South side of F street, between Second and Eighth streets ne.			90					
1019	North side of F street, between Second and Eighth streets ne.			30					
1020	Twelfth street nw., near V street. ....								
1021	Square No. 711 .....								
1022	Fourteenth street nw. (west side, just south of Park road).								
1023	Kennedy street nw., between Georgia avenue and Third street.								
1024	Second and F streets se. (southwest corner) .....			18					
1025	Second and California streets ne. (southwest corner).			9					
1026	Pennsylvania avenue nw., between Sixth and Seventh streets.				67.75				
1027	Fourteenth street (west side), just south of Park road.								
1028	Square No. 3117 (north and south alley) .....				155				
1029	Square No. 3117 (east and west alley) .....				105.8				
1030	Walter Reed Army, General Hospital grounds .....		43.5						
1031	Fourteenth and Ingraham streets nw. (northwest and southwest corners).								30
1032	Square No. 2556, in alley .....			130					
1033	Franklin street ne., east of Thirteenth street .....		50						
1034	Connecticut avenue, crossing McKinley street nw. ....		92						
1035	F street nw., between Sixth and Seventh streets ..				130.5				
1036	Georgia avenue nw., in front of parcel No. 96/4 <sup>c</sup> ..								
1037	Alley of square No. 2851 .....		125						
1039	Alley of square No. 2882 .....			20					
1040	Sixth street nw., between Butternut and Aspen streets.		104						
1041	Square No. 502, in alley .....		40						
1042	Square No. 757, in alley .....				24				
1044	Square No. 2672, in alley .....				650				
1045	Right of way parcel 42/50, square No. 2073 .....		29.6						

<sup>a</sup> Pumped out 5 cellars.<sup>b</sup> Two manholes also abandoned.<sup>c</sup> Roping Pennsylvania avenue for floral parade.

ous trust fund deposits, fiscal year ended June 30, 1910.

Man- holes.	Basins.				Amount of deposit.	Cost of work.	Amount returned.	For whom done.	Foreman.	Date of com- pletion.
	Built.	Rebuilt.	Built.	Rebuilt.						
				4	\$420.00	\$256.56	\$163.44	William G. Kinsman.	W. J. Ward.	July 19, 1909
					239.27	239.27		Elliott Woods, super- intendent Capitol Buildings, etc.	do.	July 20, 1909
	1				Gen.dep.	29.19		Capital Traction Co.	Lanigan	Aug. 10, 1909
			1		do.	172.86		Washington Railway and Electric Co.	do.	Aug. 9, 1909
				1	170.00	149.73	20.27	H. B. Coblenz	do.	Jan. 8, 1910
					40.00	40.00		Heiskell & McLeran.	Johnson	Aug. 20, 1909
			2		Gen.dep.	21.11		Washington Railway and Electric Co.	Lanigan	Sept. 4, 1909
					90.00	60.83	29.17	Milton Baristow	do.	Mar. 5, 1910
			2		Gen.dep.	111.28		Capital Traction Co.	do.	Sept. 4, 1909
1					119.03	119.03		Elliott Woods, super- intendent Capitol Buildings, etc.	do.	June 6, 1910
			2		Gen.dep.	114.79		Anacostia and Poto- mac River R.R. Co.	do.	Sept. 20, 1909
				1	37.96	37.96		J. Karr	do.	Mar. 6, 1910
			2		Gen.dep.	102.77		Capital Traction Co.	do.	Sept. 20, 1909
					250.00	229.87	20.13	W. T. Galliher	do.	Oct. 1, 1909
1					200.00	161.29	38.71	G. B. Mullin	W. J. Ward.	Feb. 2, 1910
				2	125.00	100.70	24.30	J. T. D. Fuller	Lanigan	May 6, 1910
				1	35.00	18.62	16.38	E. R. Marden	W. J. Ward.	Nov. 4, 1909
			1		170.00	122.96	47.04	George S. Cooper	Lanigan	Nov. 2, 1909
				8	Gen.dep.	327.77		Capital Traction Co.	do.	Oct. 30, 1909
				3	do.	190.91		do.	do.	Nov. 17, 1909
				1	15.00	6.55	8.45	F. C. Stelzer	do.	Oct. 27, 1909
					4.23	4.23		W. F. Strouse, engi- neer, Washington Terminal Co.	do.	Apr. 8, 1910
				1	15.00	8.37	6.63	Robert B. Caverley	do.	Nov. 8, 1909
d 6					Gen.dep.	59.46		Engineer of high- ways for Washing- ton and Baltimore Traction Co.	W. J. Ward.	Dec. 3, 1909
			1		do.	70.35		Capital Traction Co.	Lanigan	Dec. 2, 1909
				1	do.	54.84		do.	do.	Dec. 3, 1909
				3	240.00	193.69	46.31	E. J. Quinn	do.	Mar. 5, 1910
				1	15.00	10.95	4.05	Robert B. Caverly	do.	Dec. 9, 1909
2					420.00	351.41	68.59	Chesapeake and Po- tomac Telephone Co.	do.	Jan. 7, 1910
1				1	325.00	213.56	111.44	do.	do.	do.
1					74.40	74.40		Captain Pettus, U. S. Army.	W. J. Ward.	Jan. 5, 1910
			2		160.00	137.60	22.40	D. J. Howell	Lanigan	Jan. 22, 1910
					360.00	221.43	138.57	Howard Etchison	do.	Apr. 6, 1910
					72.00	61.98	10.02	Mary M. Keefar	do.	Mar. 14, 1910
					100.00	86.32	13.68	W. L. Follmer	W. J. Ward.	Apr. 6, 1910
				3	475.00	420.91		A. P. Clark, jr.	Lanigan	
	1				65.00	51.61	13.39	George Field	W. J. Ward.	Feb. 24, 1910
	1			1	220.00	198.47	21.53	W. A. Volland	do.	July 7, 1910
	1			2	100.00	89.36	10.64	John McGregor	do.	Apr. 26, 1910
					150.00	83.72	66.28	William K. Hill	do.	June 23, 1910
				1	100.00	100.00		W. K. Mitchell	do.	June 22, 1910
				1	75.00	57.20	17.80	Roland Apartment House Co.	do.	June 6, 1910
	2				1,185.00	908.71	276.29	R. O. Bales	do.	July 7, 1910
1				27	100.00	52.95	47.05	A. B. Farnham	do.	May 31, 1910

d Adjusted.

e House sewer also connected.

TABLE No. 4.—*Statement of sewers laid under miscellaneous*

No. of order.	Location.	Pipe sewers laid.							
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.
1046	Pleasant drive to intersection of Thirty-seventh and Kanawha streets.	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i> 618.7	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>
1047	Eighth and L streets se. (southwest corner) <sup>a</sup> .....			14	49.1				
1048	Square No. 110, in alley.....		25						
1049	Square No. 4076, in alley.....			175					
1050	Second street ne., between C and D streets.....				13				
1052	Seventeenth street nw., between Kilbourne and Kenyon streets.....			100					
1053	Navy-yard car barns (Capital Traction Co.) <sup>b</sup> .....								
1054	Biltmore street, at Twentieth street (north side) ..			5					
1055	Kansas avenue nw., between Webster and Allison.			31					
1056	Seventeenth street nw., between Kalorama road and Euclid street.			64					
1057	Nebraska avenue, between Pleasant drive and Jenifer street. <sup>c</sup>								
1058	L and M streets se., between Seventh and Eighth streets. <sup>d</sup>			18					
1060	N street nw. (south side), between Eleventh and Twelfth streets. <sup>e</sup>	105							
1061	Connecticut avenue, between Keokuk and Legation streets. <sup>e</sup>			422					
1062	Franklin street, near North Capitol street.....	15							
1063	Missouri avenue nw., between Four-and-a-half and Sixth streets. <sup>f</sup>			39					
1043	Florida avenue and Eckington place, and North Capitol and First streets. <sup>g</sup>			78					
	Total.....	169	978.1	1,986.7	1,243.15	22	120	3	30

<sup>a</sup> Also abandoned 74.1 feet of 12-inch, 1 manhole, and 1 basin.<sup>b</sup> Drained storage batteries.<sup>c</sup> Work done in connection with contract No. 4557.<sup>d</sup> Two manholes also abandoned.

trust fund deposits, fiscal year ended June 30, 1910—Continued.

Man-holes.		Basins.		Branches.	Amount of deposit.	Cost of work.	Amount returned.	For whom done.	Foreman.	Date of completion.
Built.	Rebuilt.	Built.	Rebuilt.							
	2				\$875.00	\$769.24	\$105.76	A. E. Walker & Co..	W. J. Ward.	July 7, 1910
1		1			Gen.dep.	243.37		Capital Traction Co..	Lanigan....	Apr. 25, 1910
				1	50.00	45.12	4.88	Maj. H. G. Cole.....	W. J. Ward.	June 6, 1910
				14	260.00	242.69	17.31	A. H. Semmes.....	Lanigan....	Apr. 30, 1910
				2	30.00	29.80	.20	J. W. Hummer.....	W. J. Ward.	July 7, 1910
1				4	160.00	156.05	3.95	L. E. Breuninger.....	do.....	June 8, 1910
					24.70	24.70		Capital Traction Co..	L. G. Randall.	Sept. 4, 1909
				1	30.00	18.14	11.86	A. P. Clark, jr.....	W. J. Ward.	June 24, 1910
				2	75.00	29.83	45.17	Chas. A. Peters.....	do.....	May 31, 1910
				4	130.00	97.50	32.50	Dr. J. J. Slattery.....	do.....	July 11, 1910
					853.21	853.21		Thomas J. Fisher & Co.	do.....	June 18, 1910
		2			Gen.dep.	92.64	Gen.dep.	Capital Traction Co..	Lanigan....	June 23, 1910
1					150.00			A. Samaha.....	W. J. Ward.	
					660.00			F. R. Gordon and E. J. Stellwagen.	do.....	
					25.00	10.86	14.14	Joseph Paul.....	Lanigan....	June 25, 1910
					Gen.dep.	149.07		Washington Railway and Electric Co.	do.....	Feb. 25, 1910
		2			do....	141.81		do.....	do.....	Apr. 30, 1909
11	13	11	19	81	9,489.80	9,029.60	1,478.33			

\* Work completed fiscal year 1911.

f Track drains.

g Work done in fiscal year 1909, report not complete in 1909 table; waiting for bill for repairs to pavements.



TABLE No. 5.—Statement of sewers laid under the appropriation for "Main and pipe sewers," fiscal year ended June 30, 1910.

No. of order.	Location.	Pipe sewers laid.						Branches.	Basins.		Basin tops re-	Manholes built.	Cost of—				Total cost.
		8-Inch.	10-Inch.	12-Inch.	15-Inch.	18-Inch.	24-Inch.		Built.	Rebuilt.			Material.	Labor.	Repairs to pavements.	Work by plumber.	
500	Florida and West Virginia avenues ne., north-west and northeast corners.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.							\$15.86			a \$15.86
501	W street se., between Sixteenth and Fendall streets.													8.94			a 8.94
502	Around Iowa Circle.	252	282					13					\$246.99	520.15			767.14
503	do.	18						1					23.23	49.50			72.73
504	Second and K streets se.		9						3				55.15	94.38			149.53
505	Rhode Island avenue at Fifth and Sixth streets ne.		24					1			1		39.30	57.49			96.79
506	Fourteenth and W streets se.																
507	New Jersey avenue and N street se., District of Columbia property yard.		15					1				1,252.12	594.34				b 1,846.46
508	Third street nw., north of T street.		6					1				16.59	38.69				55.28
509	Eighth and I streets ne.		33					1				19.30	39.88				59.18
510	School and Irving streets nw.		38									20.18	44.51				64.69
511	Eighteenth and Summit Place nw.		36	45					1			11.39	42.06				53.45
512	North Capitol and Quincy streets.		9								1	60.14	113.06				173.20
513	First and Seaton streets nw.		15					1				14.35	28.87				43.22
514	Fourteenth and Meridian streets nw.		18					1				15.16	42.94				58.10
515	Fourteenth and Oak streets nw.		18					1				17.69	39.28				56.97
516	Thirteenth and B streets sw.		18					1				13.55	55.72	\$11.46			80.73
517	Eleventh and Harvard streets nw.		30		15			1				16.74	52.51				69.25
518	Nineteenth and Monroe streets nw.		24					1				26.29	52.88				79.17
519	Eighth and Lawrence streets ne.		30					1				26.06	50.56				77.52
520	Four-and-a-half street and Maine avenue sw.		15					1				13.34	36.43	25.43			75.20
521	Sixth and L streets se.		6					1				10.40	66.01				75.41
522	Alley of square No. 200		6					1				10.69	39.15				49.84
523	Garfield street, west of Connecticut avenue nw.		15					1				22.47	42.79				65.26
524	Thirteenth street nw., between Ohio and Pennsylvania avenues.										1,265.72	4,591.08		\$22.05			c 5,878.85
526	Park place nw., at Luray place and Park road.		39					2			32.32	90.15					122.47
527	Lincoln road and Todd place ne.		30					1			20.65	48.85		2.36			71.86
528	U street nw., east of First street.		9					1			12.90	31.43					44.33
529	Eighth and R streets nw.		12					2			38.87	63.18					102.05
530	Fourteenth and I streets nw.		15					1		1	5.87	10.50					16.37
531	Kentucky avenue and B street se.										20.72	44.62					65.34
532	Kentucky avenue se., between Fourteenth and C streets.		200					1			97.99	255.40					353.39



TABLE No. 5.—Statement of sewers laid under the appropriation for "Main and pipe sewers," fiscal year ended June 30, 1910—Continued.

No. of order.	Location.	Pipe sewers laid.						Branches.		Basins.		Manholes built.	Cost of—				Total cost.
		8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	24-inch.			Built.	Rebuilt.		Material.	Labor.	Repairs to pavements.	Work by plumber.	
567	Fourteenth street nw., between New York avenue and H street	Fed. 27				Fed. 24				1			\$1,932.22	\$6,987.18	\$50.16		\$8,989.56
568	Ninth street and Kent place ne.		6							2			22.92	64.78			87.70
569	Harvard street, at Fifteenth and Sixteenth streets nw.		9	143.6			501	6		1		2	812.27	2,194.51	11.78	\$28.35	3,046.91
570	New Jersey avenue nw., between D and E streets.									1			24.68	36.07			60.75
571	Ninth and French streets nw.		9	12						1			22.00	24.93			46.93
572	Square No. 157, alley of.									2			50.71	102.56			153.27
573	Twelfth street nw., at Clifton and Euclid streets.		54														
574	Fourteenth street nw., at Euclid and Fairmont streets.		30							1	1		25.63	52.11			77.74
575	Sixteenth street, at C and D, Seventeenth and C streets, Potomac avenue and D street nw.		126							5			123.93	198.47			322.40
576	Vermont avenue and L street nw.		21							1			16.80	40.94			57.74
577	Four-and-a-half street and Maine avenue sw.												87.00	76.00			163.00
578	Seventeenth and E streets se.		15							1			30.08	42.93			73.01
579	Twelfth and T streets nw.		45							1			15.65	38.00			53.65
580	A street ne., at Fourteenth and Sixteenth streets.		48							2			50.68	92.70			143.38
581	Fourteenth and A streets ne.		33							1			26.17	44.40			70.57
582	Massachusetts avenue nw., east of Thomas circle.		48							1			25.67	39.60			65.27
584	Harvard street nw., at Fifteenth and Sixteenth streets nw.		36										11.93	43.88			55.81
585	Twelfth and S streets nw.		6							1			19.62	39.34			58.96
1132	Water street sw., between L and P streets												53.46	404.46	7.77		465.69
1137	Florida avenue nw., west of New Hampshire avenue.												3.57	57.36			60.93
1139	Water street sw., between Seventh and Fourteenth streets.												21.05	124.57			145.62
614	Harrison street, east of Baltimore and Ohio tracks, Anacostia.		33										9.58	29.91	18.45		57.94
	Total.	255	2489.2	1027.3	242.6	96.2	901.5	28		78	6	1	8,617.00	22,137.49	306.92	101.66	29,572.71

■ 392.25 linear feet 4-foot 6-inch diameter sewer, 1 automatic gauge chamber, and 1 manhole constructed.

TABLE NO. 6.—Statement of sewers laid under the appropriation for "Suburban sewers," fiscal year ended June 30, 1910.

No. of order.	Location.	Pipe sewers laid.							Manholes built.	Branches used.	Miscellaneous work.	Cost of—			Total cost.
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.			Material.	Labor.	Repaving.	
		<i>Ft.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						
800	Through southwesterly portion of Tuberculosis Hospital grounds.	587.5								3		\$182.06	\$756.53		\$938.59
801	Thirteenth street n.w., between Taylor and Upshur streets.	349.0										69.63	257.53		327.16
802	Rock Creek Park, south of Massachusetts avenue.										Chamber and inlet section west side intersecting sewer with gate house.	551.84	1,514.96		2,066.80
803	Rock Creek, crossing west side Rock Creek intersecting sewer.										Concrete dam and 354 feet of 24-inch cast-iron pipe.	1,377.20	1,798.54		3,175.74
804	Rock Creek, crossing east side Rock Creek intersecting sewer.										Chamber and outlet section, west side intersection.	193.98	875.50		1,069.48
805	Rock Creek valley, south of Massachusetts avenue.							192			48-inch check valve installed and concrete stall rebuilt.	255.56	839.78		1,095.34
806	Rock Creek Park at Bowlder Bridge.						148.5			4	63 feet, 20-inch diameter, cast-iron pipe laid.	460.52	1,234.21		1,694.73
807	Along Beach drive, crossing Broad Branch.						50.5			2	45 feet, 20-inch diameter, cast-iron pipe laid.	183.37	299.89		483.26
808	Square No. 2006, in alley.											11.15	39.24		50.39
809	Broad Branch, crossing Soapstone Branch.	53.7			24.5		66.5			2		98.11	275.13	\$1.45	374.69
810	North from intersection of Wisconsin avenue and S street.				6.0			814.2		4		723.14	1,079.46		1,802.60
811	North from intersection of Wisconsin avenue and thirty-fourth street.						13.0	672.7		2		629.87	1,049.28		1,679.15
812	Otis street n.e., between Montello and West Virginia avenues.							426.5		1	2	347.01	424.08		770.09
813	Eleventh street n.w., between Fairmont and Euclid streets.				125.8					1	5	63.60	176.30	27.62	267.52
814	Minnesota avenue, between Nicholson street and L'Enfant square.		203							1	3	74.39	151.50		225.89
815	Twenty-eighth street n.w., between Woodley road and Cathedral avenue.				233					1	6	108.48	306.08		414.56

TABLE NO. 6.—Statement of sewers laid under the appropriation for "Suburban sewers," fiscal year ended June 30, 1910—Continued.

No. of order.	Location.	Pipe sewers laid.							Manholes built.	Branches used.	Miscellaneous work.	Cost of—			Total cost.
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.	24-inch.			Material.	Labor.	Repa'ing.	
816	Good Hope road, between Fendall and Avalon streets.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	1	4	\$96.70	\$333.18	.....	\$429.88
817	Garrison street, between Wisconsin avenue and Forty-first street.	.....	.....	.....	510	.....	.....	.....	.....	1	.....	197.11	481.58	.....	678.69
818	Forty-first street, between Fessenden and Garrison streets.	.....	.....	285.5	262	.....	.....	.....	.....	2	1	210.95	547.12	.....	758.07
819	Adams street n.w., abutting square No. 3125.	.....	62.0	.....	.....	.....	.....	.....	.....	.....	.....	18.34	66.57	.....	84.91
820	Quackenbos street, between Second and Third streets n.w.	.....	.....	.....	211	.....	.....	.....	.....	.....	.....	74.00	201.70	.....	275.70
821	Monroe street, east of Nineteenth street n.w.	.....	.....	.....	154	.....	.....	.....	.....	.....	7	56.46	180.56	.....	237.02
822	Quackenbos street, between Georgia avenue and Ninth street.	.....	.....	400	.....	.....	.....	.....	.....	1	13	137.30	334.53	.....	471.83
823	Ninth street n.w., between Quackenbos and Rittenhouse streets.	.....	218	.....	.....	.....	.....	.....	.....	1	.....	103.90	280.55	.....	384.45
825	Buchanan street, between Fourteenth and Fifteenth and Fourteenth streets north of Buchanan street.	.....	.....	103.2	.....	479	.....	.....	.....	1	16	299.46	788.38	\$36.70	1,124.54
826	Fourteenth street n.w., between Webster and Buchanan streets.	.....	.....	.....	.....	776	.....	.....	.....	2	.....	409.60	1,161.67	21.68	1,592.95
828	Lincoln road ne., between R and Randolph streets.	.....	.....	.....	.....	62	.....	.....	.....	.....	1	48.00	142.44	6.24	196.68
829	Connecticut avenue, between Keokuk and Legation street and Legation street between Connecticut avenue and Thirty-ninth street.	.....	.....	.....	586	.....	.....	.....	.....	2	.....	262.34	527.37	.....	779.71
830	Connecticut avenue, between Legation and Livingston streets, and Livingston street between Connecticut avenue and Thirty-ninth street.	.....	.....	.....	685	.....	.....	.....	.....	1	1	280.41	1,174.35	.....	1,454.76
831	Legation street, between Connecticut avenue and Thirty-ninth street.	.....	.....	.....	584.6	.....	.....	.....	.....	.....	.....	230.56	560.88	.....	791.44
832	Thirty-ninth street, between Keokuk and Legation streets.	.....	.....	.....	341	.....	.....	.....	.....	.....	1	129.01	233.81	.....	362.82

	Grounds of Industrial Home School	205		205.9				1	6		Outlet sewer for Industrial Home School	23.65	111.24	134.89
834	Georgia avenue, between Quebec Place and Rock Creek Church road										124.51	343.56	42.63	510.70
835	Neal street ne., between Montello and Trinidad avenues	420						2	16		131.07	473.35		604.42
836	Square No. 2865, in alley							3	10		139.91	287.90	1.16	430.47
837	Lawrence street ne., between Thirteenth and Fourteenth streets							1	1		115.19	419.51		534.70
838	Ingraham street, crossing Fourteenth street nw.							71	1		84.81	270.63	9.24	304.68
842	Park road nw., between Seventeenth and Eighteenth streets							1			17.26	12.75		30.01
843	Connecticut avenue sewer at Woodley road	121.3						2	1	96.7 feet of cast-iron pipe laid.	174.24	417.14		591.38
844	Jefferson street nw., between Georgia and Illinois avenues	153							5		44.78	156.25		201.03
845	Kalorama road, between Twenty-third street and Connecticut avenue	150							1		51.75	120.10		171.85
846	Total	205	1,531.5	2,132.2	4,083.9	1,522.9	278.5	1,913.4	263	45	102	8,781.22	20,705.23	29,633.17

TABLE No. 7.—Statement of sewers laid under appropriation "Elimination of grade crossings," fiscal year ended June 30, 1910.

No. of order.	Location.	Pipe sewers laid.			Manholes.		Basins.			Cost of—		Total cost.
		8-Inch.	10-Inch.	12-Inch.	Built.	Adjusted.	Built.	Re-built.	Abandoned.	Material.	Labor.	
		<i>Fed.</i>	<i>Fed.</i>	<i>Fed.</i>								
400	K street se., at Fourth, Fifth, and Sixth streets		84				4			\$69.21	\$147.25	\$216.46
401	Sixth and K streets se. and Fourth street north of K								3	17.76	23.06	43.82
402	New Jersey avenue se. bridge, south approach				1					15.82	47.82	63.64
403	Florida and New York avenues, northwest corner			15			1			27.14	39.37	66.51
404	K street se., between Third and Fourth streets		24				1			49.02	149.06	198.98
405	North Capitol, north of Massachusetts avenue		24		1		3			162.04	359.20	528.74
406	D street ne., east of North Capitol		171			1		4		26.96	86.73	113.69
407	Delaware avenue and D street ne.		66							52.32	105.56	157.88
408	.....do.....			63								
	Total		375	78	3	1	10	4	3	421.17	935.09	1,366.76

TABLE No. 8.—*Sewage disposal system, District of Columbia, construction.*

Contract or job No.	Contractor or foreman.	Location.	Character of work.	Payments on contracts.	Materials.		Cost of—				Total cost.	Completed.	Appropriation.
					Charged to contractor.	Not charged to contractor.	Inspection.	Material.	Labor.	Repairs to pavements.			
4300	Shepherd Engineering Co.	Sewage pumping station.	Two engines for generating plant.	\$5,126.00							\$6,612.03	Yes...	Unused balances.
4367	W. F. Brenizer Co.	Under Rhode Island avenue divide.	Section "E," east side interceptor.	31,525.58	\$4,172.02		\$1,519.25	\$115.83	\$1,370.20		37,216.85	No...	East side Interceptor. Boundary to Brookland.
4379	.....do.....	Water street sw., between L and P streets.	Extension, Water and L streets	5,893.02	440.39	\$540.73	128.00				7,002.14	Yes...	Unused balances.
4380	.....do.....	Sewage pumping station.	Interceptor, extension of fa-	5,394.86	762.75		117.50				6,275.11	Yes...	Do.
4514	James A. Coyle...	Twenty-first street, between A and D streets ne.	Section "F," east side interceptor.	3,789.59	1,323.00		306.75				5,419.34	Yes...	East side Interceptor. Boundary to Brookland.
4515	Ed. G. Gummel...	Right of way north-east, between M and P streets.	Section "G," east side interceptor.	4,397.60	1,452.90	7.36	292.00				6,149.86	Yes...	Do.
1103	Foreman H. C. Peacock.	N street se., at Ninth, Twelfth, and Fourteenth streets.	Regulator chamber construction.					336.24	671.30		1,007.54	Yes...	Unused balances.
1140	Foreman W. J. Ward.	Twenty-first street ne., between A and B streets.	Drainage ditch and sewer connection.						253.49		253.49	Yes...	East side Interceptor. Boundary to Brookland.
	Total.....			56,126.65	8,151.06	548.09	2,363.50	452.07	2,294.99		69,936.36	.....	





TABLE NO. 9.—Statement of work done under miscellaneous

No. of order.	Location.	Pipe sewers laid.							Manholes built.	Manholes adjusted.	Basins built.
		6-Inch.	8-Inch.	10-Inch.	12-Inch.	15-Inch.	18-Inch.	21-Inch.			
		<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>			
1100	} Around Iowa circle .....		786	18					1		15
1101											
1102										1	
1104	Fourth street nw., north of Elm street. . .										
1105	Third and U streets nw. (northwest corner).			6							
1106	Second and G streets ne. ....										
1107	R street nw., west of Marlon street, and Seventh street nw., between R street and Rhode Island avenue. <sup>a</sup>			6							
1108	North Capitol street and Lincoln road..			42							1
1109	Lincoln road (east side, south of R street).									2	
1111	Fourteenth and F streets nw. (northwest corner).			24							
1112	Hamilton street, between Thirteenth and Fourteenth streets nw.										
1113	Fifth street ne. (east side, south of I street)			6							
1114	Eighth and E streets ne. (southeast corner) and west side of Eighth street, near E street.										
1115	East side of Eighth street ne., south of H street.										
1116	Second street sw., at I, G, and F streets.			12	15						
1117	E street nw., between North Capitol street and New Jersey avenue.								2		
1118	Eighth street and Rhode Island avenue nw. (southwest corner) and north side Rhode Island avenue, west of Seventh street.			9							
1119	Seventh and L streets sw. (northeast corner) and south side L street, near Seventh street.			15	18						2
1120	Pennsylvania avenue se., just east of Eighth street.										
1121	Public playgrounds, Thirty-third to Thirty-fourth streets and I street and Volta place nw. <sup>b</sup>		140								
1125	Rhode Island avenue, at Ninth, Tenth, and Twelfth streets nw., and north side of Rhode Island avenue, east of Tenth street.				27						
1126	Fifth and D streets nw. (northeast corner)			42							1
1127	Twelfth and B streets se. (northeast and northwest corners).										
1128	R street nw., at Seventh, Eighth, and Ninth streets.										
1129	Fourteenth and P streets nw. (northeast corner).										
1130	Massachusetts avenue nw. (south side, between Fourth and Fifth streets).			6							
1131	Florida avenue nw., at Sixteenth and Seventeenth streets.			9							
1133	Florida avenue nw., between Eleventh and Fourteenth streets.				18						3
1134	Third street and South Carolina avenue se. <sup>c</sup>										
1135	Fifteenth street nw., at Corcoran, R, and S streets.			24							
1136	Rock Creek Church road, west of New Hampshire avenue.									2	
1138	Eastern avenue, Takoma Park. ....		97						1		

<sup>a</sup> Constructed seal to gutter drop.<sup>b</sup> Also one Y branch used.<sup>c</sup> Filled in over sewer trench

appropriations for fiscal year ended June 30, 1910.

Basins rebuilt.	Basins adjusted.	Basins abandoned.	Tops replaced.	Cost of—				Total cost.	Appropriations.
				Materials.	Labor.	Contingen- cies.	Repaving.		
				\$258.44	\$455.91	\$35.72		\$750.07	Repairs to streets, 1910.
1				8.50	22.50	1.55		32.55	Do.
1				4.85	7.31	.61		12.77	Paving Fourth street nw., Elm to W streets.
1				7.94	28.75	1.83		38.52	Paving Third street nw., T to Elm streets.
				.20	6.00			6.20	Eliminating grade crossings, District of Columbia purchase, etc., of land, etc.
1	1			22.55	38.43	3.05		64.03	Repairs to streets, 1910.
				23.71	45.91	3.48		73.10	Paving Lincoln road, Truxton circle to R street.
				11.65	33.25	2.25		47.15	Do.
1				17.08	56.08	3.66		76.82	Repairs to streets, 1910.
				2,611.41	4,774.68			7,386.09	Assessment and permit work, 1910; one-half cost deposited Lynchburg Investment Co.
1				7.94	40.86	2.44		51.24	Northeast schedule, 1910.
2				7.99	28.04	1.80		37.83	Do.
1				3.89	11.24	.76		15.89	Do.
4		1		89.70	134.44	11.21		235.35	Southwest schedule, 1910.
				52.82	95.50			148.32	Eliminating grade crossings, District of Columbia, purchase, etc., of land, etc.
2				33.60	60.51	4.71		98.82	Repairs to streets, 1910.
				29.88	79.23	5.46		114.57	Southwest section, 1910.
	1				4.44	.22		4.66	Repairs to streets, 1910.
				23.18	108.69	6.59		138.46	Playgrounds, Georgetown, site, improvement, and equipment.
5				87.87	171.38	12.96		272.21	Repairs to streets, 1910.
				18.05	73.45	4.58		96.08	Sidewalks and curbs around public reservation, 1910.
2				8.08	23.25	1.57		32.90	Southeast schedule, 1910.
4				20.93	79.89	5.04		105.86	Repairs to streets, 1910.
1				16.76	37.12	2.69		56.57	Do.
1				19.05	31.84	2.54		53.43	Do.
3				18.70	37.13	2.79		58.62	Do.
				61.27	112.12	8.67		182.06	Northwest schedule, 1910.
				207.00	165.14			372.14	Fourth street se., relief sewer.
4				75.84	146.30	11.11		233.25	Repairs to streets, 1910.
				4.78	6.86	.58		12.22	Repairs to county roads, 1910.
				40.03	69.81	5.49		115.33	Magnolia avenue, outlet sewer, Takoma Park.

TABLE NO. 9.—*Statement of work done under miscellaneous*

No. of order.	Location.	Pipe sewers laid.							Manholes built.	Manholes adjusted.	Basins built.
		6-inch.	8-inch.	10-inch.	12-inch.	15-inch.	18-inch.	21-inch.			
		<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>			
1141	Fourth street se., between Pennsylvania and North Carolina avenues, and North Carolina avenue between Third and Fourth streets. <sup>a b</sup>										
1142	Reservation No. 8 (Ninth street, at New York avenue nw.).			31.7		85.4			1		
1145	Seventeenth and C streets nw. (north-west corner).			9							1
1146	H street nw., at Eighth and Ninth streets.			18							
1147	Eighth and I streets nw. (northeast corner).			30					1		1
1148	Thirteenth street nw., at B street, Ohio avenue, C and D streets.			39							
1149	French street nw., west of Ninth street.			9							1
1150	Fourteenth street nw., at B street and Ohio avenue.			6							1
1151	Fourteenth street nw., at C street and Ohio avenue.		6								1
1152	Fourteenth and Irving streets nw			21							1
1153	Vermont avenue and L street nw			9							
1154	Twelfth and U streets nw			12							1
1156	Third street nw., at D, E, F, G, and H streets. <sup>c</sup>			114							9
1158	North side of Massachusetts avenue nw., east of Thomas circle.			24							1
1159	Sixteenth street nw., south from B street c.	1,206	585	74.4					3		
	Total.....	1,206	1,614	616.1	78	85.4			7	7	39

<sup>a</sup> Awaiting bill for repairs of pavements.<sup>b</sup> 715 feet of 4-foot sewer lined with 6 inches concrete.

appropriation for fiscal year ended June 30, 1910—Continued.

Basins rebuilt.	Basins adjusted.	Basins abandoned.	Tops replaced.	Cost of—				Total cost.	Appropriations.
				Materials.	Labor.	Contingen- cies.	Repaving.		
				\$509.78	\$2,903.49			\$3,413.27	Fourth street se., relief sewer.
				155.29	443.50	\$29.94		628.73	Public convenience station on res- ervation No. 8.
				21.29	44.50	3.29		69.08	Assessment and permit work, 1910, "streets."
2				51.80	85.22	6.85		143.87	Repairs to streets, 1910.
				37.52	69.93	5.37		112.82	Do.
4				80.90	138.20	10.96		230.06	Do.
				21.99	25.31	2.37		49.67	Assessment and permit, 1910, "streets."
1				18.94	33.97	2.65		55.56	Repairs to streets, 1910.
1	1			19.39	42.63	3.11		65.13	Do.
				23.84	42.56	3.32		69.72	Do.
1				12.58	34.44	2.35		49.37	Do.
				14.41	36.66	2.55		53.62	Do.
				198.97	416.79	30.79		646.55	Repairs to streets, 1910-11.
				17.77	49.40	3.36		70.53	Do.
				295.86	709.86	50.29		1,056.01	Additional swimming pools (bath- ing beach).
29	16	2	1	5,274.02	12,062.52	300.56		17,637.10	

c Work completed in fiscal year 1911.

TABLE No. 10.—*Number of inspectors and other employees of the sewer division, temporarily employed and the appropriations from which paid for the fiscal year ended June 30, 1910.*

[This table includes the cost of 1 employee from the record room, 1 from the disbursing office, 1 from the surveyor's office, carried on the rolls for four months each, also 4 employees of the property office carried on the rolls for three months each.]

Appropriations.	Inspectors.	Overseers.	Other employees.
Construction, sewerage system:			
Main and pipe sewers.....	\$943.50	\$777.00	\$869.37
Suburban sewers.....	2,668.00	458.50	1,213.25
Assessment and permit work.....	1,549.50	753.14	943.13
Fourth street se., relief sewer.....	197.00	209.38	248.88
Piney Branch trunk sewer.....	546.00	43.75	154.00
Elimination of grade crossings, District of Columbia.....		75.25	
Miscellaneous trust fund deposits, District of Columbia.....	288.00	176.61	
Repairs to streets.....		141.25	
Assessment and permit work "streets".....		2.50	
Paving Third street nw., T to Elm streets.....		3.75	
Paving Fourth street nw., Elm to W streets.....		1.25	
Improvement and repairs—			
Northwest schedule.....		9.38	
Northeast schedule.....		5.00	
Southeast schedule.....		3.75	
Southwest schedule.....		18.75	
Sidewalks and curbs around public reservations.....		5.00	
Paving Lincoln road.....		3.75	
Paving Lincoln road, Truxtun circle to R street.....		3.75	
Playgrounds: Georgetown site; improvement and equipment.....		7.50	
Constructing additional swimming pools.....		16.87	
Takoma Park outlet sewer.....		2.62	
Public convenience station on reservation No. 8.....		34.12	
Construction, sewage-disposal system:			
Unused balances.....	607.00		
Eastside interceptor to Brookland.....	2,279.00		147.25
Maintenance:			
Cleaning and repairing.....	292.00	679.06	380.00
Maintenance and operation.....			245.00

TABLE No. 11.—*Average cost of labor and material of pipe sewers (per linear foot) and storm-water receiving basins constructed by day labor.*

Size of sewer.	Length.	Cost of—		Total.
		Material.	Labor.	
	<i>Feet.</i>			
8-inch diameter.....	6,210.2	\$0.290	\$1.003	\$1.293
10-inch diameter.....	18,681.0	.352	.990	1.342
12-inch diameter.....	15,018.1	.426	1.120	1.546
15-inch diameter.....	6,387.0	.515	1.192	1.707
18-inch diameter.....	247.0	.665	1.486	2.151
21-inch diameter.....	1,266.0	.852	1.517	2.369
24-inch diameter.....	569.1	1.140	1.723	2.863
Basins, each (including connection to sewer).....				60.28

TABLE No. 12.—*Average cost of pipe sewers for ten years.*

Year.	8-inch diameter.		10-inch diameter.		12-inch diameter.		15-inch diameter.		18-inch diameter.		21-inch diameter.		24-inch diameter.	
	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.	La- bor.	Ma- te- rial.
1901....	\$0.78	\$0.30	\$0.86	\$0.41	\$0.92	\$0.46	\$1.19	\$0.64	\$1.38	\$0.73	\$1.50	\$0.89	\$2.20	\$1.18
1902....	.83	.32	.97	.41	1.04	.46	1.46	.62	1.74	.78	1.91	.96	2.43	1.23
1903....	.80	.36	1.03	.53	1.09	.54	1.32	.73	1.52	.81	1.57	1.06	1.74	1.32
1904....	.97	.36	.92	.55	1.17	.65	1.45	.81	1.61	.91	1.94	1.24	2.24	1.47
1905....	.98	.38	.96	.55	1.19	.60	1.41	.77	1.45	.89	1.92	1.01	1.87	1.43
1906....	.87	.33	1.19	.47	1.26	.54	1.41	.67	1.53	.78	1.88	.93	2.45	1.24
1907....	1.42	.43	1.43	.48	1.30	.56	1.46	.70	1.82	.85	2.09	.98	2.78	1.26
1908....	1.34	.42	1.26	.50	1.44	.61	1.69	.75	1.91	.90	1.74	1.14	3.65	1.50
1909....	1.34	.36	1.16	.36	1.46	.46	1.59	.56	1.58	.62	1.67	1.07	1.91	1.18
1910....	1.00	.29	.99	.35	1.12	.43	1.19	.52	1.49	.66	1.52	.85	1.72	1.14

TABLE NO. 13.—*Summary of sewerage system for twenty years.*

Fiscal year.	Total cost of sewerage system.	Cost of sewerage system for each year.	Total miles trunk sewers.	Total miles pipe sewers.	Annual cost of maintenance sewerage system.	Cost of sewage-disposal system for each year.	Annual cost of maintenance sewerage-disposal system.
1891	\$7,623,721.62	\$223,000.00	64.89	216.79	\$42,000.00		
1892	7,842,721.62	219,000.00	67.16	227.60	43,000.00		
1893	8,007,721.62	165,000.00	68.37	238.45	45,000.00		
1894	8,298,931.62	291,210.00	71.32	250.13	45,000.00	\$86,704.34	
1895	8,476,431.62	177,500.00	74.48	260.20	45,000.00	86,961.74	
1896	8,661,731.62	185,300.00	77.65	270.28	45,000.00	60,836.57	
1897	8,901,731.62	240,000.00	81.36	284.06	50,000.00	126,572.97	
1898	9,047,731.62	146,000.00	83.92	298.91	50,000.00	201,218.32	
1899	9,183,731.62	136,000.00	85.65	307.36	50,000.00	227,759.75	
1900	9,309,731.62	126,000.00	88.30	317.20	50,000.00	203,761.05	
1901	9,515,731.62	206,000.00	90.89	327.86	50,000.00	343,865.52	
1902	9,696,731.62	181,000.00	93.49	338.13	58,000.00	228,554.36	
1903	9,817,731.62	121,000.00	96.31	351.73	58,000.00	288,554.54	
1904	9,940,731.62	123,000.00	99.12	357.70	58,000.00	180,203.32	
1905	10,040,881.62	100,150.00	103.21	365.60	58,000.00	637,450.69	
1906	10,128,881.62	88,000.00	109.09	375.26	42,000.00	706,514.55	
1907	10,363,881.62	235,000.00	112.20	389.24	38,000.00	335,865.28	
1908	10,536,681.62	172,800.00	113.94	407.24	44,500.00	237,945.65	\$38,625.00
1909	10,688,681.62	152,000.00	117.24	424.02	45,000.00	79,119.62	58,000.00
1910	10,860,556.62	171,875.00	119.20	448.78	48,500.00	63,742.43	58,000.00

NOTE.—Cost of sewage-disposal system to date, \$4,095,630.70.

TABLE NO. 14.—*Conduits laid during fiscal year ended June 30, 1910.<sup>a</sup>*

No. of duct.	Washington Railway and Electric Co.		Capital Traction Railway Co.		Chesapeake and Potomac Telephone Co.		Western Union Telegraph Co.		Total.	
	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
1	7,922	7,922			8,644	8,644	6	6	16,572	16,572
2	1,478	2,956			33,529	67,058	323	646	35,330	70,660
3					15	45			15	45
4	36,684	146,736	79	316	10,632	42,528			47,395	189,580
6	16	96			3,756	22,536			3,772	22,632
8	395	3,160	184	1,472	6	48			585	4,680
12	8	96							8	96
20	13	260							13	260
Total.	46,516	161,226	263	1,788	56,582	140,859	329	652	103,690	304,525

<sup>a</sup> This table does not include 800 feet of United States Government conduit, 156.5 feet of Washington Market Company pipe line, and 68 feet of private conduit.TABLE NO. 15.—*Gas mains laid during fiscal year ended June 30, 1910.*

Size of main.	Washington Gas Light Co.	Georgetown Gas Light Co.	Total.
	<i>Linear feet.</i>	<i>Linear feet.</i>	<i>Linear feet.</i>
1½-inch	1,475		1,475
2-inch	217		217
3-inch	101		101
4-inch	16,712	556	17,268
6-inch	28,642	1,646	30,288
12-inch	18,096		18,096
16-inch	1,055		1,055
20-inch	2,939		2,939
Total.	69,237	2,202	71,439

TABLE No. 16.—Summary of conduits laid to June 30, 1910. *a*

No. of duct.	Washington Railway and Electric Co.		Capital Traction Co.		Chesapeake and Potomac Telephone Co.		Western Union Telegraph Co.		Total.	
	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.	Conduit.	Duct.
1.....	<i>Feet.</i> 46,960	<i>Feet.</i> 46,960	<i>Feet.</i> .....	<i>Feet.</i> .....	<i>Feet.</i> 41,249	<i>Feet.</i> 41,249	<i>Feet.</i> 41	<i>Feet.</i> 41	<i>Feet.</i> 88,250	<i>Feet.</i> 88,250
2.....	133,178	266,356	15,742	31,484	210,454	420,908	1,911	3,822	361,285	722,570
3.....	236	708	.....	.....	5,594	16,782	6,940	20,820	12,770	38,310
4.....	335,672	1,342,688	18,295	73,180	158,058	632,232	7,295	29,180	519,320	2,077,280
5.....	.....	.....	.....	.....	.....	.....	4,177	20,885	4,177	20,885
6.....	50,138	300,828	7,320	43,920	90,354	542,124	4,232	25,392	152,044	912,264
7.....	.....	.....	29	203	82	574	.....	.....	111	777
8.....	73,764	590,112	8,047	64,376	45,626	365,008	.....	.....	127,437	1,019,496
9.....	7,288	65,592	.....	.....	114	1,026	.....	.....	7,402	66,618
10.....	8,363	83,630	32	320	15,948	159,480	183	1,830	24,526	245,260
12.....	60,422	725,064	769	9,228	8,496	101,952	.....	.....	69,687	836,244
13.....	374	4,862	.....	.....	212	2,756	309	4,017	895	11,635
14.....	3,104	43,456	4,257	59,598	1,400	19,600	.....	.....	8,761	122,654
15.....	68	1,020	.....	.....	.....	.....	44	660	112	1,680
16.....	4,593	73,488	376	6,016	6,913	110,608	.....	.....	11,882	190,112
17.....	.....	.....	.....	.....	636	10,812	.....	.....	636	10,812
18.....	2,214	39,852	.....	.....	2,279	41,022	.....	.....	4,493	80,874
20.....	562	11,240	770	15,400	1,407	28,140	.....	.....	2,739	54,780
22.....	134	2,948	9,109	200,398	823	18,106	.....	.....	10,066	221,432
24.....	2,711	65,064	.....	.....	2,270	54,480	.....	.....	4,981	119,544
25.....	.....	.....	.....	.....	304	7,600	.....	.....	304	7,600
26.....	.....	.....	280	7,280	.....	.....	.....	.....	280	7,280
28.....	2,261	63,308	.....	.....	.....	.....	.....	.....	2,261	63,308
30.....	53	1,590	.....	.....	313	9,390	.....	.....	366	10,980
32.....	77	2,464	.....	.....	485	15,520	.....	.....	562	17,984
36.....	3,854	138,744	.....	.....	26	936	.....	.....	3,880	139,680
38.....	193	7,334	.....	.....	.....	.....	.....	.....	193	7,334
40.....	.....	.....	.....	.....	1,589	63,560	.....	.....	1,589	63,560
44.....	424	18,656	.....	.....	.....	.....	.....	.....	424	18,656
56.....	.....	.....	.....	.....	749	41,944	.....	.....	749	41,944
58.....	7	406	.....	.....	.....	.....	.....	.....	7	406
64.....	106	6,784	.....	.....	176	11,264	.....	.....	282	18,048
70.....	.....	.....	.....	.....	53	3,710	.....	.....	53	3,710
72.....	.....	.....	.....	.....	118	8,496	.....	.....	118	8,496
82.....	.....	.....	.....	.....	35	2,870	.....	.....	35	2,870
Total ..	736,756	3,903,154	65,026	511,403	595,763	2,732,149	25,132	106,647	1,422,677	7,253,353

*a* This table does not include 14,663 feet of Postal Telegraph-Cable Company conduit, 3,246 feet of United States Government conduit, 42 feet of Great Falls and Old Dominion Railway Company conduit, 879.5 feet of Washington Market Company pipe line, and 488 feet of private conduit.

TABLE No. 17.—Summary of gas mains laid to June 30, 1910, beginning July 1, 1906.

Size of main.	Washington Gas Light Co.	Georgetown Gas Light Co.	Total.
	<i>Linear feet.</i>	<i>Linear feet.</i>	<i>Linear feet.</i>
1½-inch.....	1,475	.....	1,475
2-inch.....	217	.....	217
3-inch.....	1,747	.....	1,747
4-inch.....	47,785	8,485	56,270
6-inch.....	125,506	12,825	138,331
8-inch.....	.....	1,962	1,962
10-inch.....	.....	1,620	1,620
12-inch.....	.....	83,047	83,047
16-inch.....	55,540	27,507	83,047
20-inch.....	1,091	234	1,325
24-inch.....	3,069	.....	3,069
.....	8,066	.....	8,066
Total.....	244,496	52,633	297,129

## REPORT OF THE INSPECTOR OF BUILDINGS.

*Washington, D. C., September 10, 1910.*

SIR: I have the honor to submit herewith the annual report covering the transactions of the building department during the fiscal year ended June 30, 1910.

*Statement of permits issued from July 1, 1909, to June 30, 1910.*

	Number.	Value.		Number.	Value.
Brick repairs.....	1,884	\$1,761,292	Concrete dwelling.....	1	\$10,000
Brick dwellings.....	1,206	5,165,918	Iron sheds.....	8	2,775
Brick apartments.....	79	2,487,171	Frame dwellings.....	817	2,379,727
Brick stores.....	55	241,300	Frame repairs.....	1,128	132,644
Brick stables and dwellings.....	34	140,470	Frame sheds.....	528	35,041
Brick stables.....	55	105,917	Frame stables.....	25	6,805
Brick garages.....	50	70,760	Frame dance pavilions.....	2	560
Brick office buildings.....	12	1,372,700	Frame greenhouses.....	2	550
Brick stores and offices.....	2	35,000	Frame warehouses.....	3	1,750
Brick stores and apartments.....	3	81,000	Frame churches.....	4	4,100
Brick warehouses.....	40	215,330	Frame boathouse.....	1	2,800
Brick churches.....	3	24,000	Frame stores.....	3	1,550
Brick foundry.....	1	3,000	Frame garages.....	5	3,200
Brick 5-cent theaters.....	15	142,900	Frame clubhouses.....	2	8,500
Brick theater.....	1	60,000	Frame factories.....	3	11,200
Brick hospitals.....	2	129,681	Frame stores and dwellings.....	2	3,500
Brick hall.....	1	6,000	Frame waiting room.....	1	100
Brick pump house.....	1	1,500	Frame crematory.....	1	1,000
Brick workshops.....	5	4,950	Frame office.....	1	350
Brick kindling-wood mill.....	1	700	Motors.....	267	288,252
Brick signal towers.....	2	8,000	Elevators.....	125	297,685
Brick ice plant.....	1	80,000	Boilers and engines.....	72	72,318
Brick clubhouse.....	1	79,325	Heating apparatus.....	8	7,119
Brick sheds.....	30	5,985	Ovens.....	2	3,400
Brick printing office.....	1	35,000	Dumb-waiter.....	1	1,530
Brick bank and office building.....	1	85,000	Boilers.....	4	3,850
Brick carriage house.....	1	500	Gas engines.....	13	207,906
Brick laundries.....	3	19,000	Gasoline engines.....	3	650
Brick factory.....	1	20,000	Machinery.....	3	219,000
Brick hotels.....	2	228,000	Minor repairs.....	3,200	32,000
Brick bakeries.....	2	9,000	Fire escapes.....	59	11,800
Brick laboratory.....	1	8,000	Awnings.....	165	12,375
Brick school.....	1	20,000	Signs.....	1,016	10,160
Brick blacksmith shop.....	1	150			
Brick lunch room.....	1	2,200			
Brick machine shop.....	1	8,000			
			Total.....	10,937	16,431,946

*Comparative statement for the years 1909 and 1910.*

	New build-ings.	Repairs.	Dwell-ings.	Apart-ments.	Business build-ings.
1910.....	2,546	3,012	2,023	79	320
1909.....	2,410	2,889	2,170	78	207
	136	123	a 147	1	113

a Decrease.

## Valuation of building operations:

1910.....	\$16,431,946
1909.....	14,785,059
Increase.....	1,646,887
Permits issued, including buildings, repairs, minor repairs, awnings, engines, boilers, motors, signs, heating apparatus, etc.:	
1910.....	10,937
1909.....	9,905
Increase.....	1,032
Projections beyond the building line, permits for.....	3,037



The following summary will show the distribution of improvements in the different sections of the District and the values of same:

	Buildings.	Repairs.
Northeast.....	\$1,140,596	\$81,342
Southeast.....	483,360	154,276
Northwest.....	4,367,986	1,758,747
Southwest.....	307,066	274,239
County.....	7,085,766	712,233
Total.....	13,384,774	2,980,837

Total for buildings and repairs, \$16,365,611.

*Estimated number of buildings in the District of Columbia.*

	Brick buildings.	Frame buildings.
1909.....	52,563	23,844
Erected in 1910.....	1,682	864
Total.....	54,245	24,708

The records of the building department for the year 1910 indicate an increase over the previous year of \$1,646,887 in estimated valuation and 129 in number of buildings erected, with a decrease, though, of 147 in number of dwellings erected. It will be noted that in the year 1910 there were issued 1,032 more permits than in the year previous.

In the District appropriation bill for the year 1910 the commissioners were directed to prescribe a schedule of fees for permits which would place this office on a self-supporting basis. This new schedule went into effect July 15, 1909, and under it there were received by this office, and through the collector of taxes deposited in the Treasury of the United States to the credit of the revenues of the District of Columbia, a total of \$33,978.82, as compared with the revenues received under the old schedule in the previous year of \$10,664.

The revised building regulations of the District of Columbia were promulgated November 15, 1909. The wisdom of their enactment has been proven, and the architects, builders, and public generally have given them their ready acceptance.

An act to regulate the height of buildings in the District of Columbia was approved June 1, 1910. The most important changes from the old law in this bill were the reduction in the permissible height of combustible buildings and the increased height permissible in fireproof buildings and the further requirement that all buildings such as hotels, apartment and tenement houses three stories in height or over be of fireproof construction up to and including the main floor. Since the passage of this act there has been a material change for the better in the design of apartment houses, many of which are now constructed so as to be fireproof throughout.

Good progress has been made through the year in the enforcement of the law requiring the equipment of hospitals, schools, hotels, apartment houses, etc., with fire escapes, alarm gongs, etc. Much less opposition was encountered in the enforcement of the law than was met in the past, and, except in fireproof apartment houses, compliance by owners was readily secured.

Attention is invited to the reports of the computers, inspector of fire escapes, the elevator inspectors, and the assistant inspectors for details of work done.

As shown by the records, almost one-half of the value of the work done was in the "county," and in order to give the building construction work in the outlying territories proper inspection I earnestly recommend authority be secured from Congress for some means of transportation for the men covering these districts. Transportation facilities would accomplish the results desired better and more economically than an increase in the force and is to be preferred.

Attention is invited to the salaries paid in this department, with the recommendation that they be increased, as they are not now commensurate with the work performed.

Expenses of the force of this office last year were \$29,230 and the total revenue from fees collected \$34,474.82.

With the need of inspection of the elevators in many of the buildings rented by the Federal Government, an additional inspector of elevators becomes necessary, and an item in the appropriation bill for the employment of such an additional man for this purpose is recommended.

I also recommend that the bill "To regulate the operation of elevators and the examination, licensing, and registration of elevator operators in the District of Columbia" be again brought to the attention of Congress at its next session with favorable recommendation.

My acknowledgments are due the employees of the building department for the work accomplished by this office during the past year.

Very respectfully,

MORRIS HACKER,  
*Inspector of Buildings.*

Capt. E. M. MARKHAM,  
*Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner District of Columbia.*

#### REPORT OF INSPECTORS OF ELEVATORS.

WASHINGTON, D. C., September 7, 1910.

SIR: We have the honor to submit our combined annual report for the fiscal year ended June 30, 1910, together with certain data covering elevator installations in this city for the past year.

The elevators of this city have been entirely free from defective mechanism tending to cause accident, and whenever found unsafe have been promptly repaired or ordered out of commission. There have been no serious accidents to the machines involving loss of life. One death was caused by a freight elevator, but the verdict in this case was personal carelessness, as rendered by the coroner's jury.

Under the revised regulations in force during the past year, the general construction of new elevators has been of very high order. Due to effort on the part of builders to install first-class mechanism, and the close supervision of this office upon the details of each installation, the elevators of this city may safely be placed among the first. The work of this office has been greatly aided by recent revisions of the regulations, which define certain points heretofore somewhat obscure.

During the past fiscal year all the very unsafe, unprotected freight compartment, or double-deck elevators of this city have been provided with door-interlocking devices, or the freight compartments have been removed, as provided by law. This, we believe, is a large step forward, which has greatly increased the safety of elevator travel in this city. To accomplish this work, your inspectors have exercised great diligence, in addition to their regular inspection work.

The policy of this office of holding weekly examinations and licensing of operators has been continued throughout the past year with splendid results in regard to increase in efficiency and public safety. We believe that by educating the operator to a sense of the responsibility of his position, the best service may be obtained in this class of public transportation.

However, the work of this office in this respect has been largely handicapped by lack of authority from Congress to issue license badges and receive a fee therefor from the operators. These badges are designed to be worn by the operator when on duty, and will be issued only to those who have successfully passed the regular examination held by the board of examiners. A passenger may then see at a glance that the elevator is handled by a licensed man, and the public will thus assist this office in the enforcement of this regulation for its safety. We would therefore urge that the bill providing for this issue of badges and salary of each member of the board of examiners, which has been before the commissioners for some time, be forwarded with full indorsement for the action of Congress during the coming session.

It is usual for the United States Government to request 25 or 50 inspections a year upon elevators in the United States buildings and buildings under United States control, which do not come regularly under the supervision of this office. This work consumes a great deal of our time, breaks in upon our regular inspections, and adds greatly to our responsibility. As it takes from two to three hours to make a proper inspection of a passenger elevator, you can readily see how much time this office devotes to this extra work. We further believe that this is an imposition, because elevator experts are maintained in the Supervising Architect's Office of the Treasury Department, whose duty it should be to make these inspections, and thereby relieve this office of that work and added responsibility. Heretofore this work has been done gratis, as a courtesy to the United States Government departments. If the work

previously carried on for the Government is to be continued, we respectfully recommend that we be reimbursed to a reasonable extent for the time, expert knowledge, and responsibility involved.

We take this opportunity to call your attention to the remuneration attached to the office of the inspector of elevators, and urge an increase in salary for this specialized expert work. This office affords a yearly salary of \$1,200 at this time. The elevator mechanics of this and other cities are paid \$4.50 for an eight-hour day, with special rates and extra pay for overtime. They therefore receive more than the elevator inspector, who must judge and pass upon their work. We therefore feel that in view of the high class of knowledge and experience demanded by the work of our office, the position is not fairly compensated, and request that the salary be increased to \$1,500 per annum.

In view of the fact that the revenue to this office from the elevator division is very small, and deeming it but fair that the property owners benefited by this special inspection should bear a proportionate share of its expense to the city, we have the honor to submit a plan for apportionment of fees for elevator permits based on a sliding scale system proportional to the cost of the installations.

Previous to August 1, 1910, the fee for elevator permits was but \$1 for each permit, which during the fiscal year 1910 yielded a revenue of but about \$130. The fee was raised on August 1 of this year to \$5 per elevator, thus allowing a prospect of about \$650, based on a like number of installations this year. In our opinion this fee is excessive in the case of the average hand-power elevator, costing \$200 to \$300, and is far too small for a high-class passenger installation, costing from \$3,000 to \$6,000.

We therefore have the honor to recommend that instead of the present flat rate of \$5 per elevator, the fees be changed according to sworn statements of the cost, at the rate of one-half of 1 per cent of the cost, no fee being less than \$1. Upon this basis the fee for the average lowest price dumb-waiter, costing \$200, would be \$1, which is very reasonable. Higher class installations, involving more careful examination and constant quarterly inspection, would then yield from \$10 to \$30 each. Basing calculations upon the permits issued by this office for elevators in 1910, by this rate the revenue would have been about \$1,500.

This amount is one-half the annual cost of elevator inspection to this city. Should you deem it not an unreasonable assessment, the rate might be 1 per cent of the estimated cost, which would mean charging \$2 for the examination of the lowest price installation—a not excessive cost for expert examination. The income then would be \$3,000 and this division would be self-supporting.

In conclusion we will state that we have prepared an extensive statistical chart covering the interesting points of the elevator work built in this city during the year 1910. The above figures were taken from this chart.

## PASSENGER ELEVATORS.

Passenger elevators installed.....	62
Total cost.....	\$239,265
Average cost per installation:	
Electric.....	\$3,000
Hydraulics (plungers).....	\$5,000
Speed:	
150 feet per minute or less.....	37
150 to 350 feet per minute.....	24
Heights of rise.....	40 to 100 feet..
Average platform area:	
Public elevators.....	27 square feet..
Residence elevators.....	16 do.....
Average capacity:	
Public elevators.....	pounds.. 2,000 to 3,000
Residence elevators.....	1,250 do.....
Location of machines (electric):	
Below.....	43
Overhead.....	11
Types of car safeties:	
Governor clamp.....	22
Governor roll.....	29
Gravity instantaneous.....	3
Types of machines:	
Hydraulic plunger.....	8
Electric traction.....	8
Electric drum.....	36
Electric residence.....	9

## FREIGHT ELEVATORS.

Freight elevators installed.....	66
Total cost.....	\$55,175
Average cost per installation:	
Electric.....	\$2,000
Hand power.....	\$300
Average speed (electric).....	50 feet per minute..

Average capacity:		
Electrics.....	pounds.....	2,000
Hand power.....	do.....	1,000 to 2,000
Types of machines:		
Electric.....		23
Hand power.....		37
Hydraulic plungers.....		1
Electric dumb-waiters.....		5

Very respectfully,

WILLIAM I. EVANS,  
E. A. C. HOGE,  
*Inspectors of Elevators.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., *September 7, 1910.*

SIR: I have the honor to submit herewith my annual report for fiscal year ended June 30, 1910:

Passenger elevators installed.....	26
Freight elevators installed.....	61
Alterations to elevators.....	3
Elevators examined.....	1,082
Condemnations on elevators.....	1,401
Elevators inspected for the United States Government.....	16
Condemnations on elevators for the United States Government.....	29
Inspection of elevators for District of Columbia.....	12
Condemnations on elevators for the District of Columbia.....	14
Miscellaneous inspections.....	75
Total inspections.....	2,554

Very respectfully,

WILLIAM I. EVANS,  
*Inspector of Elevators.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., *September 7, 1910.*

SIR: I have the honor to submit my report for the fiscal year ended June 30, 1910, covering the duties assigned to me in the district north of Pennsylvania avenue, east of Tenth street, and north of Massachusetts avenue.

Passenger elevators installed.....	35
Freight elevators installed.....	34
Alterations of passenger elevators.....	3
Elevators inspected.....	1,199
Condemnations on elevators.....	1,018
Elevators inspected for United States Government.....	4
Condemnations on elevators for United States Government.....	5
Elevators inspected for District of Columbia government.....	6
Condemnations on elevators for District of Columbia government.....	12
Miscellaneous inspections, visits, etc.....	147

Very respectfully,

E. A. C. HOGE,  
*Inspector of Elevators.*

The INSPECTOR OF BUILDINGS.

#### ASSISTANT INSPECTORS' REPORT.

WASHINGTON, D. C., *August 12, 1910.*

SIR: We have the honor to submit herewith a statement of our official duties as assistant inspectors of buildings during the fiscal year ended June 30, 1910:

Visits to new buildings.....	45,665
Visits to old buildings.....	12,869
Visits of a miscellaneous character.....	4,492
Total, 1910.....	63,026
1909.....	55,995
Condemnation of buildings or parts thereof.....	737
Buildings taken down.....	10
Police court cases.....	10
Cast-iron columns inspected.....	169
Buildings renumbered.....	821
Buildings numbered (new).....	2,306

In accordance with the foregoing report, the duties of the regular field inspectors, eight in number, have been increased the past fiscal year as will be shown in comparison with the aggregate total of inspections of 1910 over the previous year ended June 30, 1909, attributable to increased building operations throughout the District. The average attained, figuring pro rata for the year just ended, shows a daily increase of inspections of 7.70 over the past year, which allows 31.13 inspections daily to the credit of each field inspector, thus, limiting time of examination in all classes of work to an average of ten and a fraction minutes, including time consumed in reaching next building. It will, therefore, be seen that in order to properly supervise and look after building operations apparently increasing each year with the city's growth and more especially in the suburban or outlying districts, combined with the importance of time thus saved in reaching the work, that we be provided with better means of transportation, or suitable allowance for team or motor conveyance, in order that we may handle to better advantage the work assigned in our respective districts.

We also request the appointment of an additional man to the present force to take up and investigate matters of minor importance, such as the renumbering of buildings occasioned by numerous requests, the drafting and delivering of notices in connection therewith and other items pertaining to violations of the building regulations.

Trusting to your good efforts in advancing the requests herein stated, we have the honor to remain,

Most respectfully,

J. M. DOWNING,  
*Acting Chief Inspector.*

A. K. SELDEN.  
J. B. HAMMOND.  
E. G. CURTIS.  
A. M. PROCTOR.  
A. S. J. ATKINSON.  
W. A. DRAPER.  
S. G. HUNTT.  
F. J. NIEDOMANSKI.

The INSPECTOR OF BUILDINGS.

#### REPORTS OF ASSISTANT INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	3,666
Visits to old buildings.....	2,153
Visits of miscellaneous character.....	882
Total.....	6,701
Condemnation of buildings or parts thereof.....	115
Buildings taken down.....	9
Police-court cases.....	2
Cast-iron columns inspected.....	30

Respectfully submitted.

E. G. CURTIS,  
*Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	10,784
Visits to old buildings.....	1,607
Visits of miscellaneous character.....	524
Total.....	12,915
Condemnation of buildings or parts thereof.....	79
Police-court cases.....	1
Cast-iron columns inspected.....	13

Respectfully submitted.

A. K. SELDEN,  
*Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	7,862
Visits to old buildings.....	1,668
Visits of miscellaneous character.....	606
Total.....	10,136
Condemnation of buildings or parts thereof.....	169
Police-court cases.....	2

Respectfully submitted.

S. G. HUNT, *Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	5,232
Visits to old buildings.....	1,838
Visits of miscellaneous character.....	813
Total.....	7,883
Condemnation of buildings or parts thereof.....	85
Police-court cases.....	2
Cast-iron columns inspected.....	47

Respectfully submitted.

A. S. J. ATKINSON, *Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	3,709
Visits to old buildings.....	1,279
Visits of miscellaneous character.....	707
Total.....	5,695
Condemnation of buildings or parts thereof.....	71
Cast-iron columns inspected.....	9

Respectfully submitted.

F. J. NIEDOMANSKI, *Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	4,113
Visits to old buildings.....	1,306
Visits of miscellaneous character.....	468
Total.....	5,887
Condemnation of buildings or parts thereof.....	100
Building taken down.....	1
Police-court cases.....	2
Cast-iron columns inspected.....	64

Respectfully submitted.

A. M. PROCTOR, *Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	4,066
Visits to old buildings.....	1,566
Visits of miscellaneous character.....	251
Total.....	5,883
Condemnation of buildings or parts thereof.....	25

Respectfully submitted.

J. B. HAMMOND, *Assistant Inspector of Buildings.*

The INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	4,537
Visits to old buildings.....	1,178
Visits of miscellaneous character.....	177
Total.....	5,892
Condemnation of buildings or parts thereof.....	82
Police-court cases.....	1
Cast-iron columns inspected.....	6

Respectfully submitted.

W. A. DRAPER,  
*Assistant Inspector of Buildings.*

N. B.—This report covers a period dating from December 22, 1909, to June 30, 1910.

W. A. D.

THE INSPECTOR OF BUILDINGS.

WASHINGTON, D. C., July 25, 1910.

SIR: I have the honor to submit herewith the statement of work performed in accordance with my official duties for year ended June 30, 1910:

Visits to new buildings.....	1,696
Visits to old buildings.....	274
Visits of miscellaneous character.....	64
Total.....	2,034
Condemnation of buildings or parts thereof.....	11

Respectfully submitted.

W. B. DAVIS,  
*Assistant Inspector of Buildings.*

N. B.—This report covers period of forty-two days in the field.

W. B. D.

THE INSPECTOR OF BUILDINGS.

#### COMPUTERS' REPORT.

WASHINGTON, August 24, 1910.

SIR: During the year it has been our duty to examine and officially stamp the plans for every building or other structure erected in the District of Columbia, to make the necessary calculations to insure structural safety, to compute the areas of buildings proposed to be erected as a basis upon which to fix permit fee under the building regulations effective November 15, 1909, and to ascertain that plans are in conformity with the regulations before being recommended for permit.

We were called upon at various times to make tests and reports thereon of floors, etc., in concrete buildings, and on foundations for different structures. Frequent examinations have been made, upon request, of buildings rented and occupied by different branches of the Federal Government; indeed, it can be stated without exaggeration, this feature of our work (being performed, of course, through courtesy) has, in respect to some buildings, necessitated the expenditure of quite a good deal of time and technical labor.

The past year has been a banner year in the history of the building department; in fact, it is believed to have been the record year in the value of operations, and while the work imposed upon this division of the department has been correspondingly increased, yet the dispatch and lack of friction with which plans have been examined and put in line for permits is felt to be a source of gratification. This is largely due, we are glad to say, to the fact that the present building regulations have proven the wisdom of their enactment in the ready acceptance and approval of them by the vast majority of architects and builders, who have, in almost every instance, heartily cooperated in the endeavor to enforce and maintain a compliance with the code.

The adoption of regulations providing for increased fire protection in the erection of buildings has been rewarded by the marked improvement shown in such structures as fall within the respective provisions; and any increase that might be incurred in the cost of construction is more than counterbalanced; it is thought, by the sense of security against structural defect and in safety from fire, and, it is believed, in financial returns.

In conclusion, we desire to state that although the labor performed has been greater in volume, perhaps, than at any time heretofore, yet the smoothness, so to speak, with which the work has been prosecuted has been a complete vindication of the present building code—if such was required—and a matter of self-congratulation to the department.

Very respectfully,

T. L. COSTIGAN,  
JNO. RITCHIE, Jr.,  
*Engineers and Computers.*

The INSPECTOR OF BUILDINGS.

#### REPORT OF INSPECTOR OF FIRE ESCAPES.

WASHINGTON, D. C., *August 15, 1910.*

SIR: I have the honor to respectfully submit my annual report for the fiscal year ended June 30, 1910, as follows:

Visits to apartment houses.....	1,078
Visits to theaters.....	242
Visits to hotels.....	125
Miscellaneous visits, including halls, public buildings, stores, etc.....	284
Cases in police court.....	12
Notices served.....	666
Compliance notices mailed.....	104
Fire escapes erected.....	166
Active cases in files.....	272

In submitting this report I would call attention to the fact that the standard type of fire escape is being more generally adhered to and also that less opposition is encountered in enforcing the fire-escape law than in the past.

Very respectfully,

JAMES P. PARRY,  
*Inspector of Fire Escapes.*

The INSPECTOR OF BUILDINGS.

#### REPORT OF INSPECTOR OF STEAM BOILERS.

WASHINGTON, D. C., *June 30, 1910.*

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1910, fees received and expenses for same:

Boilers inspected.....	536	Condemned for repairs.....	18
Fees still due.....	12	Bulged heads and shell plates.....	8
District of Columbia boilers.....	34	Dangerous boilers.....	2
Boilers condemned, unfit for further use.....	8		
Cases of—		EXPENSES.	
Deposit and sediment.....	30	Care of horse.....	\$260.00
Incrustation and scale.....	10	Shoeing horse.....	29.00
Internal corrosion.....	3	Premium on bond.....	10.00
External corrosion.....	6	Stationery and stamps.....	24.75
Internal grooving.....	0	Printing certificates.....	6.75
Defective braces and stays.....	12	Business cards.....	2.00
Setting defective.....	6	Record books.....	1.50
Fractural plates.....	7	Clerical work.....	132.00
Burned plates.....	8		
Blistered plates.....	7		466.00
Defective tubes.....	40		
Defective steam gauges.....	18	Total amount received for 490 boilers.....	2,450.00
Defective heads.....	6	Expenses.....	466.00
Serious leaks around tube ends.....	10		1,984.00
Defective blow-off.....	7		
Cases of deficiency of water.....	3		
Safety valves defective.....	20		

Very respectfully,

E. F. VERMILLION,  
*Inspector Steam Boilers, District of Columbia.*

The INSPECTOR OF BUILDINGS.



## REPORT OF BOARD OF EXAMINERS STEAM ENGINEERS.

WASHINGTON, D. C., August 31, 1910.

SIR: We herewith submit to you the report of the board of examiners of steam engineers for the year ending June 30, 1910.

The following table shows the work as it progressed from month to month:

	Meet-ings held.	Applicants—			First class.	Second class.	Third class.	Dupli-cate.	Re-voked.
		Re-ceived.	Ap-proved.	Incom-petent.					
1909.									
July.....	5	20	13	7	2	2	6	3	
August.....	4	6	1	5		1			
September.....	5	16	5	11			3	2	
October.....	5	22	11	11	1		10		
November.....	4	17	7	10		1	5	1	
December.....	5	11	6	5	1		5		
1910.									
January.....	4	18	10	8		1	8	1	
February.....	4	13	7	6		1	6		
March.....	5	8	6	2		1	4	1	
April.....	5	31	19	12	1	1	17		
May.....	4	17	8	9		4	3	1	
June.....	5	14	5	9	2		2	1	
Total.....	55	193	98	95	7	12	69	10	

The record of the work of the board is at present kept in a book which has been furnished by the members of the board at their own expense. This book is at present filled, and it is thought that in the future the record should be kept according to the card-index system, so that it may be convenient for ready reference. It is therefore requested that this office be furnished with a filing cabinet consisting of a card index containing at least 4,000 cards and file holders sufficient to contain the same number of applications with their accompanying letters. The cards should be 4 by 6 inches and be printed, leaving space sufficient to fill in the necessary record of the examinations.

Very respectfully,

E. F. VERMILLION,  
H. BOESCH, *Secretary*,  
DANL. JOHNSON,  
*Board of Examiners Steam Engineers.*

The INSPECTOR OF BUILDINGS.

## REPORT OF THE MUNICIPAL ARCHITECT.

WASHINGTON, D. C., July 28, 1910.

CAPTAIN: I have the honor to forward herewith the annual report of the operations of the office of the municipal architect for the fiscal year ended June 30, 1910. This is the first annual report of the municipal architect.

In the act making appropriations to provide for the expenses of the District government for the fiscal year ending June 30, 1910, approved March 3, 1909, provision was made for the—

“Municipal architect, whose duty it shall be to prepare and supervise the plans for, and superintend the construction of, all municipal buildings, and the repair and improvement of all buildings belonging to the District of Columbia, under the direction of the Engineer Commissioner of the District of Columbia,” etc.

In the act making appropriations to provide for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1911, with slightly changed wording, provision is made for the—

"Municipal architect, whose duty it shall be to prepare or supervise the preparation of plans for, and superintend the construction of, all municipal buildings, and the repair and improvement of all buildings belonging to the District of Columbia, and serve under the direction of the Engineer Commissioner of the District of Columbia," etc.

From the year 1878 to the year 1909 all plans for schoolhouses, engine houses, police stations, and other District government buildings were prepared under the supervision of the inspector of buildings, who was required by law and regulations to exert control over private building operations as to the safety and healthfulness of such buildings erected within the District; he found it possible also to prepare plans for the construction of District government buildings at the same time. When, however, private building operations increased from \$4,000,000 a year to \$14,000,000, with a corresponding increase in the size and structural importance of the buildings, the combined duties of inspector of buildings and city architect became too much for one man to handle properly, and those duties were therefore separated by the act approved March 3, 1909.

On July 1, 1909, the municipal architect entered upon the discharge of the duties defined by law, with 28 buildings, additions, and other structures requiring the preparation of plans, specifications, and contracts, besides numerous improvements to playgrounds and other minor structures hereinafter enumerated.

Building or work.	Appropriation available.	Cost.	Condition of work.
Public convenience station No. 3, Ninth and K streets nw.	July 1, 1908	\$17,132	Under construction; 75 per cent done; to be finished July 22, 1910.
Thomson School, No. 156, Twelfth and L streets nw.	.....do.....	99,800	Under construction; 85 per cent done; contract expired June 14, 1910; extension to July 23, 1910.
Extension to Business High School.....	.....do.....	69,300	Completed Oct. 4, 1909.
Monroe, addition, No. 72, Columbia road near Georgia avenue nw.	.....do.....	37,042	Under construction; 79 per cent done; to be completed Sept. 15, 1910.
Garfield, No. 158, Hamilton road, Garfield, D. C.	.....do.....	85,300	Completed Oct. 1, 1909.
No. 23 Engine House, G street, between Twenty-first and Twenty-second streets nw.	July 1, 1909 July 1, 1908	27,300	Under construction; 85 per cent done; to be completed Aug. 1, 1910.
Anacostia police station.....	July 1, 1907 July 1, 1908 July 1, 1909	16,365	Completed Jan. 22, 1910.
Deep wells for various schools.....	.....do.....	4,330	Completed Oct. 7, 1909.
Public convenience station No. 4, Ninth street, between F and G streets nw.	.....do.....	11,090	Ready for advertisement; held up at request of Secretary of Interior; repealed by act approved June 25, 1910.
Public convenience station No. 5, triangle west of Dupont circle nw.	.....do.....	8,081	Work begun and about 35 per cent done; repealed by sundry civil act June 25, 1910.
Five portable school buildings distributed to various sites.	.....do.....	54,629	Completed Jan. 22, 1910.
Powell School, No. 157, School street near Irving street nw.	July 1, 1908 Mar. 3, 1909	58,742	Completed Mar. 3, 1910; expiration Dec. 23, 1909; extended to Dec. 31, 1909.
Potomac School, No. 159, Tenth and E streets sw.	July 1, 1909	58,850	Under construction; 59 per cent done; to be completed Oct. 1, 1910.
John Eaton School, No. 160, Cleveland Park, D. C.	.....do.....	30,724	Under construction; 70 per cent done; to be completed Sept. 23, 1910.
Benning School, addition, No. 48, Benning, D. C.	.....do.....	33,220	Under construction; 39 per cent done; to be completed Nov. 3, 1910.
Chevy Chase, addition, No. 113, Chevy Chase, D. C.	.....do.....	31,000	Under construction; 58 per cent done; to be completed Oct. 14, 1910.
Lovejoy, addition, No. 124, Twelfth and D streets ne.	.....do.....	70,200	Under construction; 35 per cent done; to be completed Sept. 20, 1910.
Western High School, addition, Thirty-fifth street and Reservoir nw.	.....do..... June 25, 1910	40,000	Under construction; 57 per cent done; contract expires Oct. 11, 1910; additional appropriation in urgent deficiency act; additional specifications advertised July 7, 1910; opened July 18, 1910.
Brookland (colored), No. 161, Bunker Hill road.	July 1, 1909	23,661	Under construction; 12 per cent done; to be completed Nov. 3, 1910.
McKinley Manual Training School, No. 130, third extension, Rhode Island avenue and Seventh street nw.	.....do..... May 18, 1910	56,790	Plans completed and specifications undergoing revision for printer.
Reconstruction in part of schools for fire protection.	May 26, 1908 Mar. 3, 1909	39,240	Expiration contract Sept. 1, 1909; extended to Sept. 12, 1909.
Engine house No. 2, Twelfth street, between G and H streets nw.	July 1, 1909		Under construction; 65 per cent done; to be completed Aug. 11, 1910.

Building or work.	Appropriation available.	Cost.	Condition of work.
Chemical engine house, Pennsylvania and Minnesota avenues se.	July 1, 1909 (a)	.....	Plans and specifications prepared; contract let for excavation of site for foundations June 27, 1910.
Truck house, No. 10, K street, between Third and Four-and-a-half streets sw.	July 1, 1908	\$20,995	Completed Jan. 22, 1910.
Home for Aged and Infirm:			
Fire protection.....	May 26, 1908	1,484	Completed July 15, 1909.
Duplicating water supply.....	do.....	4,904	Do.
Preparation of playground site, Georgetown, Thirty-first street and Volta place, including grading, concrete wall, removing old building.	July 1, 1909	1,227	Completed Oct. 15, 1909.
John F. Cook School, No. 30, O street, near Fourth street nw., alterations and heating.	July 1, 1908	3,000	Completed June 2, 1909.
Remodeling boiler house at Industrial Home School and installation of new boiler.	July 1, 1909	.....	Aug. 21, 1909.

a Site selected and donated April 11, 1910.

*Improvements to playgrounds and other minor structures for which drawings or specifications, or both, were prepared in the office of the municipal architect.*

Building.	Work.	Date advertised.
Lucretia Mott School.....	New toilet room.....	Aug. 11, 1909
Central High School.....	Boilers.....	Aug. 30, 1909
Police court.....	Retube boiler.....	Feb. 25, 1910
Industrial Home School.....	New boiler.....	Aug. 21, 1909
Bryan School.....	Improvements to grounds.....	Do.
Georgetown playground.....	Wire fence, steps, terraces, etc.....	Aug. 23, 1909
Curtis School.....	Boiler repairs.....	Sept. 21, 1909
Webster School.....	New treads on stairs.....	Mar. 12, 1910
Five portable schools.....	.....	Sept. 24, 1909
Georgetown playgrounds.....	Grade, sod, etc.....	Oct. 1, 1909
Brent School.....	New treads on stairs.....	Mar. 12, 1910
Business High School.....	Grade and sod.....	Oct. 5, 1909
Do.....	Pave.....	Do.
Do.....	Cement coping, splash, curb, etc.....	Do.
Do.....	Sodding in front.....	Nov. 15, 1909
Do.....	Additional work.....	Dec. 30, 1909
Do.....	Repair boilers.....	July 10, 1909
Do.....	Further work.....	May 26, 1910
Georgetown playgrounds.....	Hauling top soil.....	Oct. 13, 1909
Cooke School.....	Wire guards.....	Oct. 15, 1909
Five portable schools.....	Boiler.....	Oct. 20, 1909
624-626 O street nw.....	.....	Nov. 15, 1909
Garfield, Petworth, and Powell schools.....	Steel book closets.....	Dec. 16, 1909
Bowen School.....	Parking and fence.....	July 6, 1909
Webster School.....	Retube boiler.....	July 10, 1909
Western High School.....	Retube boilers.....	July 23, 1909
Reservoir School.....	New furnaces.....	July 20, 1909
Georgetown playgrounds.....	Toilet building.....	Aug. 4, 1909
Emery School.....	Retube 2 boilers.....	Dec. 15, 1909
Potomac School.....	Raze buildings on site and grading.....	Dec. 16, 1909
Randle Highlands engine-house site.....	Excavation.....	June 6, 1910
Peabody School.....	Retube 2 boilers.....	June 1, 1910
Curtis and Hyde schools.....	Cement coping.....	June 13, 1910
Brightwood School.....	Concrete walks, etc.....	June 14, 1910
Mott School.....	Concrete walks and steps.....	June 24, 1910
Powell, Cook, Petworth, and Phelps schools.....	Grading and surfacing playgrounds.....	Do.

#### WORK STARTED.

Actual construction has been started on all buildings provided for by appropriation acts for 1910 and prior year excepting the McKinley Manual Training School extension and the engine house on Pennsylvania avenue SE., near Minnesota avenue.

In the first instance, the McKinley School, an additional appropriation was passed May 18, 1910. This necessarily required changes in plans and specifications, which were completed about July 1, 1910.

In the second instance, the engine-house site, which was required by law to be donated, was not agreed upon until April 11, 1910. Plans and specifications have since been prepared and a contract entered into for the excavation for foundations.

## APPROPRIATIONS IMMEDIATELY AVAILABLE.

The appropriation act for the fiscal year 1911 made appropriation for new buildings and for fireproofing several older buildings, available May 18, 1910. Immediately following the passage of this act plans were started for the 12-room school building at Eighth and T streets NW. and the 8-room building on Farragut street between Thirteenth and Fourteenth streets NW. Also plans for the central heating plant for the M Street High, Simmons, and Douglass schools. All of these plans will be completed about the 1st of August, 1910.

## REPAIR APPROPRIATIONS NOT IMMEDIATELY AVAILABLE.

Plans were also prepared for fuel and ash vaults in the 8-room schools, and five of these vaults are now under construction. About a month's time is saved by making these appropriations immediately available, but I think it is of greater importance that appropriations for repairs to buildings be made immediately available, especially for schools. The schools close about the 20th of June, and under the present arrangement the repair funds are not available until ten days later. This postpones the beginning of the work until the new fiscal year. In the meantime contracts for building materials have expired and the materials needed for repairs can not be obtained until new supply contracts have been executed. As a consequence, the superintendent of repairs does not receive his building materials until about the 20th of July.

## TIME TO MAKE REPAIRS.

Heretofore we have endeavored to complete the repairs to school buildings before the 20th of September, when schools reopen. This leaves but two months in which to make repairs on 150 school buildings, and results in pushing work, frequently at a detriment to the quality of workmanship. I think it should be understood with the board of education that interior repairs that might interfere with schoolroom sessions will be made within the two months referred to, but that exterior repairs and repairs in parts of buildings not occupied by classes may be made at any time when advantageous, and that repairs to grounds and fences will be made in the fall of the year, after school reopens.

I also would recommend that the police department, the fire department, and other branches of the District government be advised that repairs on their respective buildings will be made during the winter and spring, so that the entire force under the superintendent of repairs may be concentrated upon school work during the summer recess period.

## ARCHITECTS.

In accordance with the provisions of the act creating the office of municipal architect, the architects and engineers who served on the committee for the revision of the building regulations of the District of Columbia and on the committee for the inspection and report on the condition of school buildings in the District of Columbia were selected to assist in the preparation of plans and specifications for the following buildings (the plans for one-half of all the buildings having been prepared by them):

Building.	Architect.
Potomac School, No. 159, Tenth and E streets sw .....	Paul J. Pelz.
Eaton School, No. 160, Cleveland Park, D. C. ....	Appleton P. Clark, jr.
Public convenience station No. 4, Ninth street between F and G streets. .	Thomas W. Power.
Engine house No. 2, Twelfth street between G and H streets nw. ....	L. E. Dessez.
Chemical engine house, Pennsylvania and Minnesota avenues se. ....	Averill, Hall & Adams.
McKinley Manual Training School, third extension, Seventh street and Rhode Island avenue nw.	J. Rush Marshall.
Engine House No. 23, G street between Twenty-first and Twenty-second streets nw.	Hornblower and Marshall.
Public convenience station No. 3, Ninth and K streets nw. ....	Harding & Upman.
Thomson School, No. 156, Twelfth and L streets nw. ....	Marsh & Peter.
Monroe Addition, No. 72, Columbia road, near Brightwood avenue nw. .	T. J. D. Fuller.
Extension to Business High School, No. 144, Ninth street and Rhode Island avenue nw.	B. Stanley Simmons.
Anacostia police station No. 11, Anacostia, D. C. ....	Wood, Donn & Deming.
Truck house No. 10, K street, near Third street sw. ....	Arthur B. Heaton.
Powell School, No. 157, School street, near Irving street nw. ....	L. E. Dessez.

For the other 14 buildings, additions, etc., plans were prepared by the municipal architect in his office. This method or arrangement for dividing the work is similar to that in vogue in Boston and in several other cities, and was approved by the Commissioners of the District of Columbia for the reasons given in my letter to the Engineer Commissioner under date of July 27, 1909.

Copy of letter appended.

Besides these buildings, sketch plans and estimates were made in this office for the following work:

Dog pound.

Water service for the Benning School.

Playground shelter house and swimming pool.

Stockade and temporary buildings for the new workhouse at Occoquan, Va.

Stable for the water department, division of cuts.

Drawing for pneumatic-tube carrier.

Tank for the Jefferson School.

Outside stairway for Ketcham School.

Plats of playgrounds at Rosedale and Georgetown sites, for tree planting.

Metal bookcases for Gage, Powell, Ross, Garfield, Petworth, and other school buildings.

Remodel entrance at Business High School.

Boiler house, M Street High School.

Central heating plant, M Street High, Simmons, and Douglass schools.

Heating layout for Thomson School.

Heating layout for Eaton School.

Heating layout for Monroe School.

Steel stalls for No. 8 engine house.

Laundry yard for McKinley Manual Training School.

Flower stall, Eastern Market.

Drawing for shower-bath stalls for engine house.

Prisoners' inclosure, police court.

Changes in gymnasium and assembly hall, Business High School.

Change in tower of No. 2 engine house.

Drawing for balcony, Thomson School.

New entrance, Anthony Bowen School.

Grade sheet for Monroe School.

Change in No. 1 engine house.

Cases and laboratory equipment, Business High School.

Improvements for Hubbard School.

#### CUBIC COST OF BUILDINGS.

I have submitted herewith, in addenda, a table showing the cubic cost of buildings erected by the District of Columbia since the year 1896. This table is useful in estimating for the cost of buildings and additions and as an indication of the advance in cost of buildings in the past twelve years. It also is of value in making comparisons with the cost of similar buildings in other cities, especially in Boston, where school buildings are constructed with fireproof floors and are like those in Washington and are of the same general character in finish and materials. In the city of Boston the cubic-foot cost is from 20 cents to 22 cents, according to the size of the schoolrooms. It would appear from a comparison that our school buildings are constructed more economically than those in other cities, the average cost of our buildings at the present time being about 17 cents per cubic foot.

#### OFFICE FORCE.

The office force for the past year has consisted of the municipal architect, 1 overseer, 1 superintendent of construction, 1 copyist, and 14 inspectors, whose combined compensation amounts to less than 3½ per cent of the cost of the buildings under construction.<sup>a</sup> Work will be done expeditiously and more economically with a better organization and with an increased force of draftsmen, engineers, etc., who are experienced and skilled in this line of work. I therefore invite your careful consideration of the estimates submitted herewith, both for this office and for the repair shop, believing that a more liberal provision for personal services would lead to increased dispatch and efficiency in the transaction of the work under the supervision of the municipal architect.

<sup>a</sup> Table showing total expense of office appended.

In improving the physical equipment of the office, I beg to invite attention to my recommendations for several years past as inspector of buildings, and now as municipal architect, for the employment of a sanitary and heating engineer. The necessity for this is recognized in all the large cities. I beg to invite attention to the following extract from the schoolhouse department's report, of the city of Boston:

"The engineer departments are now fully established and all work of heating and electrical work is done by the board. It is done better than when done by outside engineers, for the force is employed in nothing else, and can therefore give its undivided attention to school problems."

In 1906 Boston employed an electrical engineer in connection with its schoolhouse construction, and in 1907 a civil engineer was also employed in the school architect's office.

In this city we have the services and assistance of the electrical engineer of the District of Columbia, and also the services of the plumbing inspector, but we have no one competent to design and superintend the installation and operation of heating and ventilating apparatus.

Boston has lately employed a heating engineer, and the schoolhouse department report of 1910 refers to heating plants in the following terms:

"Poor ventilation can be improved if not entirely overcome by an intelligent use of the heating apparatus and good, plain, outside air. A poor heating and ventilating system may be made to yield good results. Moreover, a good system may be entirely defeated by careless or unintelligent handling. Many of our schools have systems dependent wholly or in part on fans. The school committee, with a view to economy, ordered fans stopped each day at the close of school. The janitor is encouraged, even urged, to show economy in coal consumption. The fan is stopped when the children leave, all circulation of air stops, windows are not opened; as it will cost coal to raise the temperature when once lowered, and, besides, frost might nip the plants in window boxes. Fires are banked, and the air of the school session carefully retained in each room until just before school opens. Theoretically it is then blown out and fresh warm air blown in. The actual result of following this plan depends upon the janitor, but it is safe to say that it is never good. An intelligent janitor, who aims for fresh air rather than a record in coal consumption, aided by a teacher who is not afraid of seeing the temperature drop from 70° to 55° or 60° in a few minutes, can have classrooms in an old building with no ventilation except by gravity, and not much of that, quite as fresh and wholesome as the average modern classroom."

In this connection I desire to invite attention to the recommendation of the Schoolhouse Commission created by the act of Congress approved June 20, 1906, pages 17 and 18, as follows:

"Another change is believed to be urgently necessary and is recommended by the commission: At present the janitors of the schools are under the control of the board of education while the repair of the buildings is under the superintendent of repairs, who, himself, is under the inspector of buildings (municipal architect). The commission believes that the supervision of janitors should be transferred to the office which has control of the maintenance and repair of the buildings, rather than to put the school architect under the board of education. The best solution of all is believed to be that recommended, namely, the creation of a separate commission and the transfer from the office of the inspector of buildings to this commission of the responsibility for the construction, maintenance, and repair of the buildings, and from the board of education of its control over the janitors."

In keeping with this recommendation I would respectfully suggest that the janitors and engineers in the school buildings should be selected with a view to their assisting in making minor repairs and in keeping the buildings in proper condition, and it would be well to define their duties concerning the care of the grounds surrounding the buildings.

#### CENTRAL HEATING PLANTS.

I quote here some passages from the Boston schoolhouse department report:

"Another urgent need in the North End, not for accommodation, but for economy, is a central heating plant. \* \* \*

"In this connection it may be noted that greater safety as well as economy would result if the old heating apparatus of the adjacent schools could be replaced by one central outside heating plant, thus decreasing the fire risk in the old buildings and economizing in fuel and labor."

In the estimates for the ensuing year I have included recommendations for three additional plants of this character. One is being installed at present in the group of buildings formed by the M Street High School, the Simmons and Douglass schools, at M street NW., between First street and New Jersey avenue.

I am quoting rather freely from the report of the Boston schoolhouse department for the reason that in that city for many years the work has been conducted systematically and upon somewhat the same lines as those we have adopted here in Washington, and a great deal of time and attention has been devoted to schoolhouse work. Furthermore, schoolhouse requirements in Boston and in the District of Columbia are very similar.

#### FIRE ESCAPES.

As inspector of buildings, last year and the year before, I recommended that no money be expended in the erection of fire escapes at the schools, but that the funds be expended in improvement of the interior arrangement of buildings. In the Boston report, above referred to, this view is confirmed in the following words:

"In the order of importance good exits and sure signals have come first as being most vital for the safety not of the buildings but of the children, and practically everything is complete under these heads. All exits have been made clear, all doors open out, and hardware changed so as to prevent their being locked on the inside, and the installation of the new fire signal system is almost finished throughout the city. Coincidentally the school committee have improved the fire drill and this is now wonderfully perfect; no one who sees the drill, even in one of our old buildings under the most unfavorable conditions, can feel any anxiety about the children in case of fire. The board looks upon fire escapes as being of more service in the protection of property than of lives, and money has been expended for fire escapes only where the condition of the building has seemed extra hazardous."

#### OPEN-AIR SCHOOLS.

Buildings now being planned are, by direction of the Engineer Commissioner, designed with flat roofs and parapet walls, to afford opportunity for open-air classes. I find that in Boston these open-air schools are provided by removing the window sash in one or more of the rooms in a building, or by providing the building with casement windows running from floor to ceiling, giving opportunity for opening practically the whole side of a room to the outer air. This, in my opinion, is a good arrangement, as the pupils are not subjected to the strong winter blasts and are not seated in cross drafts, while at the same time the room is open to the outer air. Rooms of this kind are now provided in several of the buildings under construction in this city.

The portable buildings will also afford a very serviceable arrangement for consumptive classes by removing the sash from the windows and setting the buildings a little higher above the ground than is customary.

#### SCHOOLROOM LIGHTING.

For many years the question of schoolroom lighting has been under discussion. At the time of the publication of the Schoolhouse Commission's report, in 1908, it was still pending, and the commission could not determine the relative value of the unilateral and the bilateral systems. I again quote from the Boston schoolhouse department report:

"Buildings should be planned to give sunlight in every room at some hour of the day. While the board believes in unilateral lighting, it is better to have light from both sides than to have no sunlight. A room that has sunlight during all the school hours is not desirable."

It would seem from this quotation that in Boston, at least, the tendency is to obtain the bilateral light where possible, and I am forced to believe that the one-side light has been advocated on account of the comparative simplicity in the designing of the building. It is very easy to design a building with the one-side light, but it requires considerable study to design a building with the two-side light in all the rooms.

In this climate I find that the two-side light is much more popular with the teachers, as it is almost impossible to shade windows when they are on one side of the room only; when windows are open the shades are of little or no use, as they obstruct the circulation of air and are blown out of place by the drafts.

#### LEAGUE FOR THE DECORATION OF THE SCHOOLS.

During the past year the municipal architect has endeavored to cooperate with the league for the decoration of the public schools, and we are indebted to the president and secretary of the league for many suggestions which have increased the decorative effect of the buildings without increasing the cost appreciably. Miss Temple, the chairman of the committee on decoration, has advised us as to colors where buildings

were to be painted or calcimined, and in the future work we will combine on several buildings so that the expenditure by the league and the funds collected by the teachers will make a better showing than when separately expended. The appropriation for repairs will not admit of any considerable outlay for decoration, but when combined with the league funds and teachers' collections the total expenditure will make a showing, as exemplified in the Hubbard School and several others.

#### REMOVAL OF ASHES AND RUBBISH.

Many requests have been received from the school authorities for the construction of vaults or bins "for the storage of ashes," and I find that in many of the buildings ashes and rubbish are allowed to accumulate until it would amount to ten loads or more; sometimes this remains in the school building for a month or even more. In private buildings, hotels, and stores the ashes and rubbish are removed once a week, and the same rule should apply to the schools; some agreement should be made to remove the ashes, etc., every Saturday. I would suggest that a sufficient number of metal cans for a week's supply should be furnished as a part of the equipment of each building, and that these be emptied every Saturday. If ashes and rubbish are kept in metal-covered cans there is no real danger of fire, even if the cans are not in fireproof rooms.

It is of even greater importance that the outhouses at the suburban schools should receive a weekly service, and for obvious reasons these places should be cleaned every Saturday. These places are so designed as not to contain more than a week's accumulation. This question should be settled with the contractors before next fall, and the removal of this material should be given prompt attention.

There is another subject that should receive careful consideration, with a view to economy, and in keeping with the evident intent of Congress, that janitors should assist in minor repairs, especially those pertaining to heating apparatus. Every summer the smoke pipes and breeching from boilers and furnaces are taken down and cleaned out by the superintendent of repairs; tubes and radiating surfaces are also cleaned. All this work should be done by janitors and engineers during the summer vacation.

Another source of considerable expense is the care and management of gas engines and motors used in the ventilating systems of the schools, and the oil used for lubricating purposes is frequently of inferior quality or of too heavy consistency to properly lubricate these engines. We now have samples of oil at the United States Bureau of Standards for the selection of a proper oil for such purposes.

By keeping machinery clean and preventing rust and corrosion during the summer when the machines are not in use, and by more careful attention to the exhaust of gas engines a great saving can be accomplished.

During the warm dry weather the windows of school buildings should be opened daily, particularly basement windows.

I would invite attention to the very valuable report made by the committee appointed at the suggestion of Major Morrow, former Engineer Commissioner, and published in public document No. 1346, Sixtieth Congress, second session. I beg to quote several recommendations of the committee and to say that during the past year work has been done to comply with these recommendations. In most cases where the committee's report refers to buildings by name the defects have been corrected or will be as rapidly as possible. As an introduction: "The committee desires to state that the comments made hereafter apply only to a limited extent to the above (new) buildings" and they include a list of buildings erected since 1896. "Many of the older buildings were not built fireproof over the furnaces, but during the past year most of them have been fireproofed or fire protected." "An examination of the staircases in the District school buildings shows that generally they are of ample size." Last year about 36 of these stairways were fireproofed and improved in other ways.

Construct fireproof receptacles for ashes, preferably outside the buildings, removing each day's supply in iron cans. \* \* \*

The committee recommends the removal of the large amount of woodwork used in the basements of buildings, comprising closets under stairs, wainscoting, partitions, ducts, floors, etc., and their replacement with fireproof constructions, and the discontinuance of wood partitions, especially in basements. \* \* \*

Wooden joist exposed in basements should be covered with metal lathing and cement plastering.

The flues provided by the old Smead system of ventilation, through the floor construction and down drafts through ducts of studding, form a perfect condition for the spread of fire. \* \* \*



Where wall furring exists, it should be carefully investigated and fire stopped. Broken plastering exposing hollow spaces should be repaired. Wood studding should be brick nogged. \* \* \*

Coal bins should be of brick or incombustible materials, preferably vaults.

All staircases should be of fireproof construction.

The committee considers it very desirable to reconstruct floors of hallways to make them fireproof. (Eighteen finished.) \* \* \*

*Vestibules.*—In four buildings there are interior vestibules with pockets on each side, which might, in case of a panic, be a source of danger from persons becoming jammed in these places. These spaces should be closed off or the vestibules removed, if practicable.

There are also exterior storm vestibules to many buildings built of woodwork, the objection to which, in many cases, is that the exits therefrom are restricted and at right angles to the building exits and sometimes have only a narrow single door exit when the doors of the building are double. Such a contraction would be dangerous in case of a hurried exit. \* \* \*

A number of doors were not supplied with checks to hold them in place when unbolted, so that when the wind blew it was difficult to keep the doors in place. Some difficulty is experienced with double doors where one overlaps the other at the meeting joint. The committee would suggest that the projecting moulding at the joint be removed and the joint be closed with rubber or felt on the edge of the doors, so that the doors may work independently. \* \* \*

A condition met in about ten instances was that of two sets of doors (4 doors) leading to a single set (2 doors), which would create congestion in case of a crowd. \* \* \*

There are a number of buildings which have restricted exits from basements, and some which have none at all except the continuation of the main staircases; the latter applies to some of the most recent buildings. \* \* \*

Within the buildings there are many cases of doorways which are too narrow, especially from cloak rooms, which, as a matter of fact, are the real exits. The committee would recommend that standard sizes of doorways be used for class and cloak rooms. \* \* \*

Generally speaking the hallways are ample. \* \* \*

The committee may take this occasion to record its disapproval of assembly halls located in third stories, and especially in nonfireproof construction.

In entering upon the discussion of fire escapes in general, the committee recognizes that they are entering upon debatable ground, as there are many opinions respecting the use and misuse of fire escapes. It seems to be on investigation, however, that the professional view of the fire escape is that it is a means for the firemen to enter the building and to carry up fire-fighting appliances and for the use of the few persons who might be left in the building or unable to get out through the regular exits. This is not the idea, however, entertained by the public, the teachers, and the pupils for the erection of the fire escapes. They are rather inclined to believe that they are put there that they might be used by teachers and pupils in considerable numbers at one time, and from this point of view they look upon the fire escape as a dangerous and ineffectual appliance.

The committee recommends that all of the buildings should be provided with proper storage rooms or vaults, and an investigation should be made to determine the proper size of these storages with due relation to the size of the building. \* \* \*

The committee recommends that proper fireproof receptacles for ashes be provided, preferably outside of the building. (These vaults and storage places are now being built.) \* \* \*

The heating and ventilating systems of the school buildings are generally in good condition, and give satisfactory service. As previously noted under the subject of play rooms, there are 22 buildings which have play rooms not heated. The committee regards the heating of these rooms as important and that provision should be made therefor. There are 4 buildings which have teachers' rooms that are not heated, and which should be provided for. There are a number of buildings equipped with the old Smead system, with passages for the foul air through the floors and with ducts constructed with joists exposed therein and continuous lines of wood-studding. The committee has recommended under the subject of fire hazards that, on account of the opportunity presented for the spreading of fire through the building, that these systems should be changed to the more modern method with fireproof ducts for conveying the warm air and for withdrawing the foul air. (The Smead system is no longer used and has been replaced by more modern plumbing and ventilation in all of our schools.) \* \* \*

The committee has made no effort to investigate the janitor service in the buildings otherwise than to observe the care taken of the heating and ventilating apparatus, but as the knowledge has come to the committee regarding the pay of some of the janitors, it feels compelled to call attention thereto.

At the Western High School the salary of the janitor is \$1,400 per annum, and at the Business High School it is \$1,600. These amounts sound sufficient, but the janitor is compelled to employ and pay all other help for caring for the building out of his salary, so that, in the case of the Business High School, for example, the janitor pays \$65 a month for help, which leaves him \$820 per annum. The amount of knowledge and care required in such large buildings is worthy of better remuneration. These buildings are exceptionally well taken care of. \* \* \*

The school buildings as a whole are in fair condition; a few of the modern buildings are equal to those found elsewhere built for the same cost, and among the older buildings we must not forget that some of them received rewards at the world's fairs and were models for their time. \* \* \*

The committee urges that an appropriation should be made to cover the foregoing work, which should be available by March 1, so that examinations of buildings may be made, the work determined upon in each case, plans and specifications drawn, and contracts let ready to proceed with the work as soon as the school closes.

\* \* \* \* \*

It is evident that only a small portion of the needed repairs have been made from year to year on account of limited appropriations, so a sufficient sum should be provided at once to put the various school buildings in proper condition for the safety of the children and protection of the buildings generally.

\* \* \* \* \*

The aggregate estimated amount as required for these requested repairs has been made almost invariably about \$300,000 per annum, but the Congress has uniformly declined to appropriate that sum, the appropriation for this purpose generally being only a fraction of the amount required.

The work of overhauling the schools is begun in July, as the appropriation is then available, dependent, of course, upon the delivery of the necessary materials for which requisitions have been promptly sent forward to the property clerk of the District, but which, in many cases, are delayed by the difficulty of promptly obtaining needed material, which consequently results in a delay in completing the work, which, however, must be completed within less than three months.

\* \* \* \* \*

As the superintendent of repairs is required not only to look after the repairs of schools, but of engine houses, police stations, market houses, hospitals, and many other municipal buildings, it is evident that he can not give these repairs the personal attention they should receive; so the committee recommends that he be furnished with at least one assistant superintendent, and that one of his duties shall be to inspect and report upon all repairs immediately upon completion.

#### DELAYS IN COMPLETION OF GOVERNMENT WORK.

Comparison has been made of the time taken to construct private buildings and government buildings. Plans for government work must be submitted for criticism of those who will use the buildings, in order that convenience in arrangement and economy in administration may be provided for. They are also submitted to the heads of departments, the inspector of plumbing, and the electrical engineer to ascertain whether they comply with the regulations of these officers, and for suggestions and advice concerning subjects within their care. Modifications are made to meet suggestions by the aforesaid officials, and requisition is then made for printing the specifications. Here is a delay which is avoidable, as it sometimes takes several weeks to get the specifications printed. The work is then advertised, allowing about fourteen days for the preparation of bids. After the receipt of the bids about a week is required to prepare the contract and necessary bonds, etc. On account of the legal requirements and necessary routine at least a month is consumed before the work on the buildings is begun. It should also be borne in mind that on government work the eight-hour law is strictly enforced and four hours are lost each week in the summer season by the half-day Saturday.

I think it is quite clear that comparison between government work and private work upon the point of time consumed can not be made for the reason that in private work generally not more than three persons are parties to a transaction, while in government work there are probably thirty through whose hands preliminary work must pass.

#### HEATING AND VENTILATING ENGINEER.

In my annual report, as inspector of buildings, in 1907, I have the following:

"In order not to increase the appropriation for this department to a noticeable extent and restrict my recommendations to the lowest workable basis, I would say that the

most urgent help and most important position needed is that of a heating and sanitary engineer. The District has now over 200 buildings connected with the city government which contain expensive heating and ventilating plants which should have the supervision of such an official. During the past year I have been compelled to employ engineers for such work on a percentage basis, and the combined cost of the buildings would pay a good salary and give us the undivided and continual services of an expert on this very important branch of the work. In most every case where complicated heating and ventilating plants have been installed, I have been compelled to modify them to suit the conditions under which they are used and the manner of handling them. An engineer who has not made a study of the heating plants for schools can not design a school plant that will give satisfactory service, and consequently I have modified the work at a greater cost than it would have required if properly designed and installed in the first place. Besides, the superintendent of repairs is in need daily of such advice in repairing and maintaining the heating and ventilating apparatus of the schools, hospitals, police stations, engine houses, industrial schools, reformatories, etc., which come under his care. Several years ago the need of such an expert was recognized by the introduction of a bill in Congress to pay an engineer \$3,000 per annum to look after the design of such plants, but the services of such a man are needed constantly, not only to see that the plants are properly designed but that they are properly installed and maintained. I know that no well regulated corporation or business concern would for an instant think of intrusting a million dollars' worth of machinery to unskilled and inexperienced employees, and the present employees could not give the time from present duties, even if they were experienced or qualified, to care for the heating and ventilation of our city government buildings."

#### ALLOTMENT FOR PERSONAL SERVICES.

During the past year the allotment for personal services of overseers, draftsmen, copyists, and inspectors was \$17,000. From this amount about \$2,000 was deducted for similar services in the electrical engineer's office, the inspector of plumbing's division, and the superintendent of repairs' shop, leaving \$15,000 for all per diem services in this office.

The cost of the buildings under construction during the year was \$920,714, as shown by the table in addenda. The personal services therefore amounted to a little more than 1.6 per cent of the cost of the buildings. Commissions paid to outside architects amounted to \$9,820, which brings the cost of plans and inspection to the very low percentage of 2.71. The annual pay roll of the office is but \$6,500, making the total cost of the office, including plans, specifications, supervision, inspection, and clerical work \$31,000, or only 3.40 per cent of the cost of the buildings under construction during the year. This showing, I believe, is far below the average cost, and for economy of administration is unparalleled in government service.

But it has many disadvantages. The arbitrary limit is set, regardless of the amount of work to be done. One year the allotment may be ample, while the next it may be insufficient, according to the number of buildings appropriated for. The allowance is in inverse ratio to the amount of work. Moreover, it consumes a great amount of office time in keeping track of the services in order that they may be equitably charged to the several appropriations. It prevents preliminary work on plans and specifications until the appropriation is available, causing a rush of work in the office immediately after the passage of the appropriation, instead of more studied and deliberate work throughout the year.

It was only by very careful assignments and by the withdrawal of inspectors from duty on one building for service at two or more that we have been able to keep within our limitation. We had a balance on our allotment of \$146.42 at the end of the fiscal year.

But, for the reasons aforesaid, I would recommend that the personal services of inspectors be limited by a percentage of the cost of the work under construction, and that the overseers, draftsmen, and copyists be placed on an annual salary. This would greatly improve the organization of the office.

#### DELAY ON ACCOUNT OF STRIKES.

During the past year some of the buildings under construction have been delayed by labor troubles varying from one week to one month in duration. First, the carpenters were dissatisfied, and about the time some adjustment of their troubles was made the metal workers deserted the work. Further delay was caused by dissensions within the ranks of the labor associations.

We are forced in justice to the contractors who enter upon our contracts with reason to believe that the price of labor at the time the obligation is entered into will prevail throughout the contract period, to insert a "strike clause" in the contract; otherwise the contractors would be compelled to add a considerable amount to their bids to cover uncertainties and thereby run the cost of the work beyond the reasonable bounds of the estimates. In order to entitle the contractor to extension of the time, the strikes must arise "through no fault of the contractor," and must be shown to have been unavoidable or "unforeseeable." This clause will no doubt prevent any unjust imposition on a contractor who has done all in his power to push the work and obtain materials promptly. It is therefore the people only and their children that suffer for the delay in school accommodations. It is incomprehensible that the labor organizations make no distinction in their attitude toward schoolhouse work where the public in general and the children of the masses are the sufferers and not the individual or contractor; and the same is true of the engine houses where delay in completion may cost loss of life. The same argument applies to most all government work, and if strikes are unavoidable they at least should not apply to such work. In each contract there are laws quoted to protect the workman, and it is a poor rule that does not work equitably for all concerned.

#### DELAYS DUE TO THE WEATHER.

The past spring and the month of June has not been conducive to rapid work on the buildings. I have on file a report from the Weather Bureau showing that the rainfall or precipitation in inches and fraction of inches for the first half of June was 3.85. The normal or average rainfall for the past thirty-five years was 2.22 for the same period in June. This copious rainfall has affected the work in many ways and should be taken into consideration when work is overdue. The weather in the latter part of June has been extremely warm, and the contractors claim that they can not push their men and teams too hard during such weather. Efforts have been made by this office to keep the number of mechanics on the work sufficient to offset the delays due to the causes above referred to and to require the contractor to order materials in time to prevent any delay by shortage of materials for which there is no excuse.

#### ADDENDA.

##### LETTER TO ENGINEER COMMISSIONER, DATED JULY 27, 1909.

I have the honor to report that there are 16 buildings provided for in the 1910 appropriation act—11 are new buildings and 5 are additions or enlargements. Plans have already been completed for 4 of the new buildings, but there are 7 which have not been started. I am working on plans for the addition to the Western High School, and expect to start plans for the Chevy Chase School next Monday.

The act reads as follows:

"That the plans and specifications for all buildings provided for in this act shall be prepared under the supervision of the municipal architect," etc.

This provision is the same as formerly, except that the municipal architect is substituted instead of the inspector of buildings and, under this arrangement, it has been customary to give out to the architects about half of the work. This, obviously, is the most expeditious method, for if all the plans are made in this office it would take about thirty-two months with the present force of 4 draftsmen, and would require 22 draftsmen to complete the 16 plans in six months. It is not feasible to employ 22 men for six months and discharge them after the plans are prepared. The District could not obtain the services of good, experienced draftsmen under such circumstances without paying very high rates, nearly equivalent to a year's employment or compensation, and the limitation of the cost of services of draftsmen, inspectors, etc., would be taxed to the extent of \$35,000 a year. I therefore recommend that the practice of giving out the plans to the architects be continued, so that 6 or 7 architects with their organized office force may all be working at the same time on the plans under the "supervision of the municipal architect," and that the plans for the additions be made in this office.

In this way all the work appropriated for may be under construction before the end of the fiscal year.

With regard to the selection of architects, permit me to say that the choice by competition has not been satisfactory. Without exception the buildings erected through this method have patent defects and, as supervising architect, I do not feel at liberty to thoroughly change or revise drawings which have been selected in this way.

I beg to invite attention to extracts from the report of the committee of the American Institute of Architects, of which committee Mr. R. Clipston Sturgis, the school architect of Boston, was chairman:

"Your committee recommends that whenever possible an architect be employed without competition; that when competition is unavoidable, the American Institute of Architects recognize three forms of competition: \* \* \*

*Resolved:* It is unprofessional conduct for a member of the American Institute of Architects, even for payment, to submit drawings knowingly in competition with another, except under such conditions as are explicitly approved by a competent disinterested professional adviser, either a member of the American Institute of Architects or of some foreign architectural association of similar standing."

Last year the architects were selected by a vote of the representative bodies of the profession in Washington, but even in this way some architect inexperienced in the particular or special line of work may be selected on account of his known ability in other lines. It is my opinion that architects who have had school buildings, engine houses, and other city government buildings to design and who have given the most satisfaction should be selected, as the government can not afford to experiment and the municipal architect can not give sufficient time to "break in" novices in this line of work on each building.

This has been the customary professional charge (3½ per cent) without superintendence, and the office furnishes type plans, specifications, and schedule of general requirements and, of course, all necessary plats of survey and other necessary information that should expedite the work and render it less arduous than in the case of a private client. The architect is also relieved of the business end of the work, such as dealing with the contractor and the drawing up of the contract. I am therefore of the opinion that this is equal to the schedule charges of the American Institute of Architects, the contract and compensation to be conditioned upon the approval of the plans by the commissioners and that the plans will be modified as may be required to obtain bids within the amount available for the building.

I have limited my recommendations to the architects and engineers who have served on the committee for review of and the inspection and report on the condition of school buildings and the committee for the selection of the municipal architect.

These gentlemen have given from ten days to many months of their time in the interests of the District of Columbia without any hope of compensation other than public appreciation. They are all men high in their professions and experienced in the work I have recommended to their care.

I believe I can finish the plans for the other 6 buildings appropriated for in about seven months, so that all should be partly constructed this fiscal year.

The sites for some of the buildings have not been acquired, but are practically determined upon, and the architects might proceed with preliminary drawings. By such an arrangement, with the drawings for 2 schools under way in this office, we would have 8 plans in preparation at the same time.

*Descriptive schedule of buildings erected by the District of Columbia.*

1897.

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
		<i>Cubic feet.</i>	<i>Cents.</i>		
Payne, No. 98, 8-room red brick, Fifteenth and C streets se.	\$21,266	308,382	6.9	Fan, engine, and furnace.	Inspector of buildings.
Langdon, No. 108, 4-room frame, Langdon, D. C.	6,625	112,832	5.8	Gravity.....	Do.
Greenleaf, No. 105, 8-room red brick, Four-and-a-half street, between M and N streets sw.	22,858	349,492	6.5	Fan, engine, and furnace.	Do.
Hayes, No. 107, 8-room red brick, Fifth and K streets ne.	27,831	351,840	7.9	.....do.....	Do.
Douglas, No. 99, 8-room red brick, First and Pierce streets nw.	24,921	349,492	7.1	.....do.....	Do.
Anthony Bowen, No. 109, 8-room red brick, Ninth and E streets sw.	25,202	315,560	7.6	.....do.....	Do.

*Descriptive schedule of buildings erected by the District of Columbia—Continued.***1898.**

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
Bruce, No. 112, 8-room red brick, Marshall street and Sherman avenue nw.	\$27,675	<i>Cubic feet.</i> 297,216	<i>Cents.</i> 9.3	Fan, engine, and furnace.	Inspector of buildings.
Engine house No. 14, 12-room red brick, Eighth street, between D and E streets.	11,277	108,078	10.4	Furnace .....	F. B. Pyle.
Administration building, Industrial Home School.	29,000	312,840	9.2	Hot water ....	Inspector of buildings.
Hilton School, No. 115, 8-room red brick, Sixth street, between B and C streets ne.	27,999	294,408	9.6	Fan, engine, and furnace.	W. J. Marsh.
Engine house No. 15, 12-room red brick, Anacostia.	11,318	119,609	9.5	Stoves .....	Inspector of buildings.
Western High, No. 17, 30-room buff brick, Thirty-fifth and R streets nw.	100,544	875,104	11.5	Steam.....	Do.
Eckington, No. 116, 8-room red brick, First and Quincy streets ne.	27,278	353,722	7.7	Fan, engine, and furnace.	A. P. Clark, jr.
Toner, No. 114, 8-room red brick, Fourth and F streets nw.	27,753	267,455	10.2	.....do.....	Hornblower & Marshall.
Chevy Chase, No. 113, 4-room frame stucco, Connecticut avenue extended.	9,113	117,260	7.7	Gravity.....	Inspector of buildings. Snowden Ashford.
Isolation building, Providence Hospital, 23-room, red brick.	24,775	180,880	13.7	Steam .....	E. W. Donn, jr.

**1899.**

Nurses' Home, Washington Asylum, 19-room frame.	\$5,725	68,160	8.4	Steam .....	Inspector of buildings.
Hubbard, No. 119, 8-room red brick, Kenyon street, between Eleventh and Twelfth streets nw.	34,375	287,040	12.3	Fan, engine, and furnace.	Fuller & Garrett.
Alms-house wing, Washington Asylum, 12-room red brick.	13,885	86,151	13.9	Steam .....	Inspector of buildings.
Truck house E, Thirty-fourth and S streets nw., 10-room red brick.	16,509	106,440	15.4	Hot water ....	L. E. Dessez.
Girls' Reform School, 79-room red brick, Conduit road.	45,836	298,656	15.3	Steam .....	J. G. Gill.

**1900.**

Dent, No. 120, 8-room red brick, South Carolina avenue and Second street se.	\$36,442	326,294	11.2	Fan, engine, and furnace.	P. J. Peltz.
Chemical engine No. 3, 8-room buff brick, Tennyaltown road.	16,892	106,752	15.8	Furnace .....	L. E. Dessez.
Webb, No. 121, 8-room red brick, Fifteenth and Rose-dale streets ne.	35,392	296,000	11.9	Fan, engine, and furnace.	Glenn Brown.
Birney, No. 127, 8-room red brick, Anacostia.	36,585	295,750	12.0	.....do.....	C. L. Harding.
Truck house F, 8-room dark mottled brick, Whitney avenue, between Thirteenth and Fourteenth streets nw.	16,361	106,840	15.3	Furnace .....	L. E. Dessez.
Takoma, No. 118, 4-room frame stucco, Takoma Park, D. C.	21,276	169,475	12.5	Fan, engine, and furnace.	W. J. Palmer.

*Descriptive schedule of buildings erected by the District of Columbia—Continued.*

## 1901.

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
Lovejoy, No. 124, 8-room buff mottled brick, Twelfth and D streets ne.	\$34,693	<i>Cubic feet.</i> 308,850	<i>Cents.</i> 11.2	Fan, engine, and furnace.	Robert Stead.
Police station No. 10, 18-room red brick, Whitney avenue, between Seventh and Eighth streets nw.	23,838	156,660	15.2	Steam .....	A. B. Mullett & Co.
S. J. Bowen, No. 123, 8-room white mottled brick, Third and K streets sw.	37,787	285,300	13.2	Steam .....	Robert Stead.
Morgan, No. 125, 8-room common brick stucco, California avenue, near Eighteenth street nw.	36,446	318,240	11.5	Fan, engine, and furnace.	W. B. Wood.
Orr, No. 122, 4-room red brick, Twining City, D. C.	22,777	202,300	11.3	Gravity .....	Inspector of buildings.
Syphax, No. 126, 8-room red brick, Half street, between N and O streets sw.	39,237	306,487	12.1	Steam .....	Marsh & Peter.
Chemical engine No. 4, 8-room red brick, Brookland, D. C.	.....	60,480	.....	Stoves .....	Inspector of buildings.
Kenilworth, No. 128, 8-room red brick, Kenilworth, D. C.	22,946	202,300	11.3	Fan, motor, and furnace.	Do.
Receiving ward, Washington Asylum, 16-room frame stucco.	13,103	93,200	14.0	Steam .....	M. W. Bayliss.
School building, Industrial Home School, 4-room red brick.	17,084	136,442	12.5	.....do .....	W. G. Peter.

## 1902.

Armstrong Manual Training School, No. 129, 28-room cream mottled brick, fireproof, P street, between First and Second streets nw.	\$131,120	630,100	20.7	Steam .....	W. B. Wood.
McKinley Manual Training School, No. 130, 26-room buff mottled brick, Seventh street and Rhode Island avenue nw., fireproof.	130,014	556,700	23.3	.....do .....	H. I. Cobb.
Petworth, No. 131, 4-room red brick, Petworth, D. C.	23,143	205,250	11.3	Fan, engine, and furnace.	A. P. Clark, jr.
Langston, No. 132, 8-room red brick, P street, between North Capitol and First streets nw.	36,855	383,200	9.6	.....do .....	Do.
Emery, No. 133, 12-room white mottled brick, Lincoln avenue and Prospect street ne.	49,269	411,360	12.0	Steam .....	Inspector of buildings.

## 1903.

Addition to girls' cottage, 6-room red brick, Industrial Home School.	\$6,588	43,680	12.7	Steam .....	Inspector of buildings.
Chemical engine No. 5, 14-room red brick, Congress Heights.	19,969	149,250	13.3	Stoves .....	Do.

*Descriptive schedule of buildings erected by the District of Columbia—Continued.*

## 1904.

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
Wheatley, No. 136, 8-room red brick, Twelfth and N streets ne.	\$34,006	<i>Cubic feet.</i> 330,672	<i>Cents.</i> 10.2	Fan, engine, and furnace.	A. P. Clark, jr.
Addition to Cranch, No. 137, 4-room red brick, Twelfth and G streets se.	20,731	159,672	12.9	Steam.....	Inspector of buildings.
Stanton, No. 138, 4-room, rough brick, pebble dashed, Good Hope, D. C.	20,162	217,600	9.2	Gravity.....	Do.
Reno, No. 139, 4-room frame, pebble-dashed, Fort Reno, D. C.	17,927	224,000	8.0	.....do.....	Do.
Montgomery, No. 140, 8-room red brick, Twenty-seventh street, between I and K streets nw.	36,620	310,460	11.7	Fan, engine, and furnace.	Wood & Deming.
French, M. T., No. 141, 6-room, first floor fireproof, red brick, Seventh and G streets se.	19,022	122,959	15.4	.....do.....	Inspector of buildings.
Police substation, Wisconsin avenue, frame, pebble-dashed, Tennallytown, D. C.	4,123	33,408	12.3	Stoves.....	Do.
Police station No. 5, red brick, Fifth and E streets se.	26,487	170,476	15.5	Steam.....	F. B. Pyle.
Truck house G, red brick, Eighth street, between D and E streets se.	17,470	93,832	18.6	.....do.....	L. E. Dessez.
Morgue building, frame, pebble dashed, Water street, M and N streets sw.	9,304	57,439	16.2	Stoves.....	Inspector of buildings.

## 1905.

Ludlow, No. 142, 8-room red brick, Sixth and G streets ne.	\$41,060	368,000	11.1	Fan, engine, and furnace.	J. L. Smithmeyer.
Gage, No. 143, 8-room red brick, Le Droit avenue, near U street.	44,903	364,152	12.3	.....do.....	L. Norris.
Engine house No. 13, 15-room red brick, Tenth and G streets sw.	18,281	114,164	16.0	Steam.....	A. B. Mullett & Co.
Annex to above, 1-room red brick.	1,380	11,286	12.2	.....do.....	Inspector of buildings.
Quarantine building, 24-room frame, Washington Asylum grounds.	11,800	77,242	15.1	Steam.....	A. B. Mullett & Co.

## 1906.

Business High, No. 144, 60-room red brick, Ninth street and Rhode Island avenue nw.	\$165,544	1,992,272	8.3	Steam.....	B. S. Simmons.
Ross, No. 146, 8-room red brick, Harvard street nw.	41,950	366,860	11.4	Fan, motor, and furnace.	C. A. Didden.
Blow, No. 145, 8-room red brick, Nineteenth street and Benning road ne.	42,693	349,596	12.2	.....do.....	Inspector of buildings and G. O. Totten.
Engine house No. 18, red brick, Virginia avenue se.	18,243	99,576	18.3	Steam.....	L. E. Dessez.
Fire-boat house, frame and pebble dash, river front.	10,403	100,762	10.3	Stoves.....	F. H. Jackson.



*Descriptive schedule of buildings erected by the District of Columbia—Continued***1907.**

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
Hyde, No. 147, 8-room brick, O street, between Thirty-second and Thirty-third streets nw.	\$43,470	<i>Cubic feet.</i> 347,683	<i>Cents.</i> 12.5	Fan, engine, and furnace.	A. B. Heaton.
Cardozo, No. 148, 8-room brick, I street between One-half and First streets sw.	42,000	357,623	11.9	.....do.....	Marsh & Peter.
Police court, brick and terra cotta, nonfireproof, Sixth and D streets nw.	72,579	463,511	15.6	Steam .....	B. S. Simmons.
Home for Aged and Infirm, Blue Plains, D. C.	119,850	921,696	13.0	.....do .....	G. O. Totten.
Industrial Home School, brick, Blue Plains, D. C.	73,500	428,937	17.1	.....do .....	J. L. Smithmeyer.
Workhouse, fireproof, Washington Asylum.	99,695	382,572	26.0	Fan, engine, and furnace.	Inspector of buildings.

**1908.**

Addition to Eastern Market, brick, Seventh street and North Carolina avenue se....	\$23,298	226,522	10.2	Gas—steam ...	Inspector of buildings.
Chemical engine house, brick and pebble dash, Langdon, D. C.	16,400	102,592	15.9	Steam .....	Mullett & Co.
Ketcham, No. 149, brick, Anacostia, D. C.	42,500	385,919	11.0	Fan, engine, and furnace.	Inspector of buildings.
Van Ness, No. 150, brick, Fourth and M streets se.	45,650	322,758	14.1	.....do.....	Harding & Upman.
Langdon, No. 108, frame, 6-room, Twentieth street and Queens Chapel road ne.	22,993	177,235	12.9	F u r n a c e—gravity.	Inspector of buildings.
Petworth, No. 131, 4-room brick, Petworth, D. C.	23,687	147,390	16.0	Fan, engine, and furnace.	Do.
Gage, No. 143, 4-room brick, Second and Elm streets nw.	20,683	140,390	14.7	.....do.....	Do.
Emery, No. 133, 4-room brick, Lincoln avenue and Prospect street ne.	21,533	146,200	14.7	Steam.....	Do.
Brightwood, No. 151, 4-room, brick and pebble dash, Brightwood Park, D. C.	26,316	290,994	9.0	Furnace.....	Do.
Deanwood, No. 152, 4-room brick and pebble dash, Deanwood, D. C.	26,384	290,994	9.0	.....do.....	Do.
Chemical engine house, brick, Benning, D. C.	15,939	94,412	16.8	Stoves .....	L. E. Dessez.
Municipal crematorium, frame and pebble dash, B and Twenty-first streets se.	14,561	121,434	11.9	Gas.....	W. L. Webster.
Extension McKinley Manual Training, No. 130, fireproof, Rhode Island avenue and Seventh street nw.	108,340	419,199	26.0	Steam.....	L. Norris.
Cement storehouse, brick and pebble dash, Fourteenth and D streets sw.	7,995	85,000	9.4	Stove.....	Inspector of buildings.
Truck and engine house, brick and pebble dash, Lanier place, between Ontario street and Adams Mill road nw.	23,547	158,056	14.8	Steam .....	A. P. Clark, jr.

*Descriptive schedule of buildings erected by the District of Columbia—Continued.*

## 1909.

Building, name, number, description, and location.	Cost.	Cubic contents.	Cost per cubic foot.	Heating plan.	Architect.
H. D. Cooke, No. 154, 16-room, brick, Seventeenth and Euclid streets nw.	\$101,664	<i>Cubic feet.</i> 707,604	<i>Cents.</i> 14.3	Fan, engine, and furnace.	Marsh & Peter.
Mott, No. 153, 16-room, brick, Fourth and W streets nw. (New Mott).	96,182	654,782	14.7	.....do.....	S. Ashford.
McKinley Manual Training, addition (second), No. 130, fireproof, Rhode Island avenue and Seventh street nw.	53,800	176,259	30.5	Steam.....	L. Norris.
Bryan, No. 155, 12-room fire-resisting, Thirteenth and B streets se.	85,411	611,781	13.9	Fan, engine, and furnace.	L. E. Dessez.
Garfield, No. 156, fireproof to roof, Garfield, D. C.	85,461	611,781	13.9	.....do.....	Inspector of buildings.
Business High School, addition, No. 144, 15-room brick, Ninth street and Rhode Island avenue nw.	71,943	465,542	15.4	Steam.....	B. S. Simmons.
Powell, No. 157, 8-room fire-resisting, School street near Park road, nw.	54,629	332,177	16.4	Fan, motor, and furnace.	L. E. Dessez.
Truck house No. 10, 2-story brick, K street, between Third and Four-and-a-half streets sw.	20,995	118,412	17.7	Steam .....	A. B. Heaton.
Anacostia police station, pebble dash frame, Anacostia, D. C.	17,691	105,836	15.01	Furnace—gravity.	Wood, Donn, & Deming.
Thomson, No. 158, 12-room, fire-resisting, Twelfth street, between K and L streets nw.	99,800	611,781	16.3	Fan, motor, and furnace.	Marsh & Peter.

## 1910.

Convenience station No. 3, underground, Ninth and K streets nw.	\$18,632	46,662	39.9	Steam .....	Harding & Upman.
Monroe, addition, Columbia road near Sherman avenue.	27,042	228,240	16.2	Fan, motor, and furnace.	T. J. D. Fuller.
Engine house No. 23, G street near Twenty-second street nw.	27,300	119,940	22.7	Steam .....	Hornblower & Marshall.
Convenience station No. 5, brick and tile, Dupont circle.	11,090	26,380	42.03	Furnace .....	Municipal architect.
Potomac, semi fireproof, Tenth and E streets sw.	58,742	388,176	15.13	Fan, motor, and furnace.	P. J. Pelz.
Eaton, semi fireproof, Cleveland Park.	58,850	336,204	17.46	.....do.....	A. P. Clark, jr.
Benning's addition, brick, Benning, D. C.	30,724	145,168	21.1	Steam .....	Municipal architect.
Chevy Chase, addition, brick, Chevy Chase, D. C.	33,220	200,108	16.5	Fan, motor, and furnace.	Do.
Lovejoy, addition, brick, Twelfth and D streets ne.	31,000	171,050	18.1	.....do.....	Do.
Western High School, addition, brick, Thirty-fifth and R streets nw.	70,200	373,500	19.2	Steam .....	Do.
Brookland, 2-room brick, Bunker Hill road.	23,661	186,228	12.7	Furnace—gravity.	Do.
Engine house No. 2, semi fireproof, Twelfth street near G street.	39,240	221,860	17.6	Steam .....	L. E. Dessez.

*Comparative statement of cost of repairs in various cities.*

City.	Total cost of buildings and grounds.	Buildings.	Rooms.	Pupils.	Total repairs to buildings and grounds.	Per cent of cost on total valuation.	Cost per building for repairs.	Cost per room for repairs.	Cost per pupil for repairs.
Washington...	\$9,000,000	155	1,240	54,000	\$75,000	0.83	\$483.87	\$60.48	\$1.388
New York.....	106,600,000	543	15,870	567,015	1,100,950	1.03	2,027.73	69.50	1.941
Boston.....	15,529,466	229	a 1,894	96,673	242,500	1.56	1,058.94	121.25	2.508
Cleveland.....	8,088,763	99	1,582	69,512	62,511	.77	631.32	39.51	.898
St. Louis.....	11,560,534	177	1,802	86,877	113,600	.98	641.81	63.04	1.31
Philadelphia....	17,727,825	288	3,769	166,093	306,250	1.72	1,064.06	81.25	1.83
Chicago.....	39,883,512	308	5,546	296,427	757,687	1.89	2,460.02	136.78	2.54
Baltimore.....	4,474,561	147	1,400	80,235	121,547	(b)	826.85	86.82	1.51

a 106 portable.

b Ground rent.

*Repairs to schools.*

Total accounted for on written orders.....	\$52,358.80
Miscellaneous time consumed in shop and schools.....	12,875.69
Material drawn from shop for use in various schools by janitor, etc.....	2,293.00
Purchase of forage.....	466.08
Purchase of mules.....	205.80
Telephone service, residence of superintendent.....	36.00
Horseshoeing.....	76.96
Material on hand.....	6,512.67
Unexpended.....	175.00
Total.....	75,000.00

For the purpose of drawing a comparison between the amounts expended on repairing school buildings in the city of Boston and in the city of Washington, the following is submitted:

Boston has 229 school buildings repaired at a total cost of \$242,498 per annum; Washington has 155 buildings repaired at a total cost of \$75,000. At this rate Boston spends \$1,058.94 on each building and surrounding ground, while Washington spends \$483.87 on each.

We have (on present estimated values) \$9,000,000 invested in school buildings, grounds, and permanent equipment. Allowing 1 per cent for repairs would equal \$90,000 per year for repairs.

Private corporations allow about 6 per cent of the amount received for rentals for expenditure in repairs, and schools, on account of the heavy damage due to hard use, should be allowed twice as much. In Washington the rental of the schools based on above valuation would amount to \$720,000 a year, and allowing 12 per cent for repairs, would afford \$86,400 per year for repairs.

There are over 2,000,000 square feet of floor area in the school buildings. Allowing 4 cents per foot, repairs would cost \$80,000.

It should be borne in mind that the cost of painting done on buildings (\$11,123.86) includes the cost of glazing, due largely to breakage, resulting from the location of playgrounds adjacent thereto, and amount to about 16 per cent of this cost (\$1,800). The cost of resurfacing and painting 37,200 square yards of blackboards is also included in this item, amounting to about 12 per cent of the cost of painting (\$1,300).

Some idea of the extent of the work can be had by contemplating repairs on 23 acres of roof surface, 4½ miles of rain spout, 9 miles of roof gutters and valleys, 4,000 plumbing fixtures, about 6 acres of window glass, over 3,000 doors, and 300,000 square yards of plastered ceilings, which need constant repair to prevent accident from falling plaster.

The amount of \$5,349.47 of the total accounted for on written orders (\$52,358.80) was expended in improving the grounds, as shown in statement.

The law requiring work of this kind to be advertised entails an additional expense of \$600 for printing and \$400 for blueprinting. The expense of advertising applies to all departments and is not a specific charge against the running expenses of any particular office.

*Expense, 1910.*

Buildings under appropriation for 1910.....	\$824, 635
Work on buildings under the appropriation extending into the fiscal year 1911, an average of three and one-half months.....	175, 210
Amount of the 1910 appropriation expended during the fiscal year 1910.....	649, 425
Work on buildings under the appropriation for 1909 extending into the year 1910, an average of six and one-half months.....	271, 289
Total amount expended from all building appropriations during the fiscal year 1910.....	920, 714

*Personal services.*

Draftsmen, inspectors, and copyists.....	17, 000
Less allotment to electrical engineer, inspector of plumbing, and property clerk.....	1, 900
Personal services in this office.....	<sup>a</sup> 15, 100
Architects' commissions for 1910.....	9, 820
Annual pay roll in office.....	<sup>b</sup> 24, 920
Total cost of plans, specifications, supervision, and inspection of all District government buildings constructed during the fiscal year 1910.....	<sup>c</sup> 31, 420

SNOWDEN ASHFORD,  
*Municipal Architect.*

Capt. E. M. MARKHAM,  
*Corps of Engineers, U. S. Army,*  
*Assistant to the Engineer Commissioner, D. C.*

## REPORT OF THE SUPERINTENDENT OF REPAIRS.

SIR: I have the honor to forward herewith my annual report of the repair shop for the fiscal year ended June 30, 1910.

The last appropriation for fiscal year 1910, amounting to \$75,000 for repairs to schools, as usual was not sufficient to cover all the work requested by the custodians of the various buildings. It has been my custom to first make repairs to keep the buildings from deteriorating, and then any improvements that the funds will allow. With the small amount of money appropriated each year to meet the many demands, it is almost impossible to perform the duties of this department to the satisfaction of all concerned.

The appropriation act, 1910, provided \$60,000 for fire protection in the public-school buildings, which was expended in completing fireproof stairways and fireproofing over furnaces. In order to fully complete the work as originally planned, it is necessary to fireproof the entire first-floor corridors and halls of the buildings on which work of this character is now being done, and then take up the work of fireproofing the 86 additional schools which require attention along these lines. It is not possible, owing to the short period in which these improvements must be made, to attempt to improve more than 18 or 20 buildings during the summer vacation, and this completely exhausts the amount of the appropriation. To finish these 18 buildings by constructing with fireproof material the entire first floors will necessitate a further appropriation of \$75,000, after which, providing the necessary funds are appropriated by Congress, work may be commenced on a portion of the 86 buildings still needing attention. The money thus far appropriated has been expended very judiciously,

<sup>a</sup> One and sixty-four one-hundredths per cent of total amount expended.

<sup>b</sup> Two and seventy-one one-hundredths per cent of total amount expended.

<sup>c</sup> Three and forty-one one-hundredths per cent of the total amount expended in buildings per annum.

as the contracts have been reasonable and good results have been obtained. This work is very necessary for the protection of the lives of the school children, and it is my earnest desire that the appropriation herein requested be granted, to the end that all the schools may be fireproofed within the next few years.

The \$5,000 appropriated for deep wells was expended in sinking deep wells on the grounds of 8 schools.

I again urgently recommend the changing of the present method of purchasing materials. The system now in vogue has greatly hampered me this year in beginning work which can be performed only during the period from July 1 to September 15, and by July 25 practically none of the necessary materials had been delivered. As this naturally interferes with the business of this office, I therefore respectfully recommend that the honorable Commissioners be requested to ask Congress to enact a law by which the municipal architect will be given authority to make purchases of stock in quantities, after requesting at least three bids, when practicable, the cost of these materials to be paid for out of one appropriation, said appropriation to be reimbursed by repayments to be charged to the several funds on account of which said stock, from time to time, is used.

In this connection, I would also recommend that Congress be asked to make all appropriations for use by this office immediately available, so that preparation for work might be begun as early as June 1. This would permit of the employment of labor for which no funds may now be disbursed until July 1, and if materials could also be purchased by us at an early date work would be well under way by June 20, in this manner saving fully a month not possible to be used now for reasons aforesaid.

This shop is continually in receipt of requests for petty repairs in school buildings which could very easily be taken care of by the janitors. As it is, my repair fund is repeatedly drawn upon for very trivial matters. If the janitors were furnished with a few simple tools and instructed in the use thereof by the manual-training branch of the board of education, so that said janitors might take care of the various repair items of a very minor character which at present cost from five to ten times as much as would be the case if attended to by them, the money so expended could be utilized in making repairs of a far more important nature, and thus aid materially in taking much better care of the District school property.

In the United States Statutes at Large, volume 21, page 464, it is "Provided that the janitors of the principal school buildings, in addition to their other duties, shall do all minor repairs to buildings \* \* \* glazing, \* \* \*"

In volume 1 (R. S., D. C., p. 477, par. 7) it is provided, "That hereafter the janitors of the principal buildings, in addition to their duties, shall do all minor repairs to buildings \* \* \* glazing, \* \* \* and take care of the heating apparatus." To enable me to obtain the best possible results of the fund appropriated for repairs to school buildings, etc., I earnestly recommend that the board of education be asked to instruct their corps of janitors in accordance with the foregoing statutes to the end that, with their cooperation, the public schools of this city may be more appreciably benefited.

In my estimate for 1912 I am again requesting that the amounts of the several appropriations under my charge be increased. The number of buildings, repairs, and improvements which I am called upon to care for is constantly growing, yet it is expected that this work be performed year after year for practically the same amount, the additional small sums granted by Congress in the past being entirely inadequate to render the services required of my force.

During the past year 15 per cent of the appropriation for repairs to schools was spent on heating apparatus alone. During the coming fiscal year it will be necessary to use more than \$5,000 to replace broken and worn-out parts of furnaces, etc. In addition to this, several of the larger heating plants must be completely repaired and some of the older ones will practically need replacing. To do this work will require an expenditure of about 20 per cent of the total repair fund. As can be readily seen, this greatly depletes the funds out of which much other very important work must be paid for. If the present appropriation of \$60,000 "for repairs and improvements to school buildings and grounds and for repairing and renewing heating and ventilating apparatus" was available for use on repairs and improvements of all kinds, with the exception of the heating apparatus, and that an increased amount be appropriated sufficient to care for heating plants was granted, much better results in all directions could be obtained. Some of the plants now in use have already deteriorated so much from age and are in need of such constant and thorough repairs that it would be considerably cheaper if they were replaced, yet this is an impossibility, owing to the fact that the appropriation is already entirely too small to meet the demands now made upon this office, notwithstanding that quite a few of the apparatus require

most careful supervision. For this reason I earnestly recommend that Congress be importuned to give us an appropriation to care for this very important item.

Private corporations allow about 6 per cent of the amount of the rentals for repairs. Schools, on account of the heavy damage due to hard use, should be allowed twice as much of the amount the schools would rent for.

We have (on present estimated values) \$9,000,000 invested in school buildings, grounds, and equipments—allowing 1 per cent for repairs would equal \$90,000 per year.

There are over 2,000,000 square feet of floor area in the school buildings. Allowing 4 cents per foot, repairs would cost \$80,000.

It should be borne in mind that the cost of painting done on buildings, \$11,165.20, includes the cost of glazing, due largely to breakage, resulting from the location of playgrounds adjacent thereto, and amounts to about 16 per cent of the total cost. The cost of resurfacing and painting 37,200 square yards of blackboards is also included in this item, amounting to about 12 per cent of the total cost.

During the year a record has been kept of buildings where fire occurred, as follows: On October 7, 1909, a fire occurred at the Syphax School, damage amounting to \$50. On February 4, 1910, closets and woodwork was destroyed by fire at the Polk School; damage, \$50. On April 29, 1910, a slight fire occurred in the fumigating room of the tuberculosis hospital; damage to building and contents amounting to \$15.

The following detailed statement and summary will convey an approximate idea of the amount and class of work performed under my supervision.

*Repairs and improvements to school buildings and grounds, 1910.*

[Appropriation \$75,000.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>Abbot School, No. 27.</i>				
Carpentering.....	\$45.31	\$99.02	.....	\$144.33
Painting.....	116.70	9.59	.....	126.29
Heating.....	3.75	.16	\$17.83	21.74
Iron grating over areas.....			324.80	324.80
Material drawn by janitor.....		2.77	.....	2.77
Total.....	165.76	111.54	342.63	619.93
<i>Adams School, No. 65.</i>				
Carpentering.....	77.29	120.14	.....	197.43
Painting.....	56.46	17.46	.....	73.92
Tinning.....	11.00	6.57	.....	17.57
Heating.....			60.95	60.95
Grading.....	3.00		.....	3.00
Material drawn by janitor.....		1.46	.....	1.46
Total.....	147.75	145.63	60.95	354.33
<i>Addison School, No. 53.</i>				
Carpentering.....	65.44	96.43	.....	161.87
Painting.....	97.07	29.41	.....	126.48
Tinning.....	30.89	9.04	.....	39.93
Heating.....			16.12	16.12
Material drawn by janitor.....		3.99	.....	3.99
Total.....	193.40	138.87	16.12	348.39
<i>Ambush School, No. 79.</i>				
Carpentering.....	134.14	93.56	.....	227.70
Painting.....	20.45	5.41	.....	25.86
Tinning.....	71.81	120.99	.....	192.80
Heating.....			62.31	62.31
Material drawn by janitor.....		3.69	.....	3.69
Total.....	226.40	223.65	62.31	512.36
<i>Amidon School, No. 42.</i>				
Carpentering.....	148.75	124.67	.....	273.42
Painting.....	14.69	6.10	.....	20.79
Tinning.....	211.46	80.92	.....	292.38
Heating.....	.50	1.10	2.94	4.54
Gas engine.....	39.51	11.21	19.95	70.67
Total.....	414.91	224.00	22.89	661.80

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Armstrong Manual Training School, No. 129.</i>				
Carpentering.....	\$592.45	\$188.46		\$780.91
Painting.....	92.45	35.61		128.06
Tinning.....	39.26	17.47		56.73
Heating.....	90.90	114.57		205.47
Grading.....	1.25			1.25
Miscellaneous.....		.63		.63
Material drawn by janitor.....		13.79		13.79
Total.....	816.31	370.53		1,186.84
<i>Arthur School, No. 70.</i>				
Carpentering.....	35.44	82.22		117.66
Painting.....	5.76	4.40		10.16
Heating.....			\$23.33	23.33
Grading.....	.38			.38
Material drawn by janitor.....		1.21		1.21
Total.....	41.58	87.83	23.33	152.74
<i>Banneker School, No. 39.</i>				
Carpentering.....	101.84	80.49		182.33
Painting.....	28.66	3.89		32.55
Tinning.....	164.26	97.54		261.80
Heating.....			23.02	23.02
Gas engine.....	15.00	10.48		25.48
Material drawn by janitor.....		1.25		1.25
Total.....	309.76	193.65	23.02	526.43
<i>Bell School, No. 78.</i>				
Carpentering.....	9.59	7.65		17.24
Painting.....	2.70	2.03		4.73
Tinning.....		1.86		1.86
Heating.....			5.35	5.35
Grading.....	10.69	9.47		20.16
Gas engine.....	1.00			1.00
Material drawn by janitor.....		.75		.75
Total.....	23.98	21.76	5.35	51.09
<i>Benning School, No. 48.</i>				
Carpentering.....	2.50	4.75		7.25
Painting.....	3.13	.89		4.02
Heating.....	1.75			1.75
Grading.....	4.50			4.50
Repair pump.....	10.50	.50		11.00
Total.....	22.38	6.14		28.52
<i>Berret School, No. 68.</i>				
Carpentering.....	46.30	79.97		126.27
Painting.....	9.20	3.43		12.63
Tinning.....	2.06	.39		2.45
Heating.....			15.04	15.04
Material drawn by janitor.....		2.45		2.45
Total.....	57.56	86.24	15.04	158.84
<i>Birney School, No. 127.</i>				
Carpentering.....	49.36	77.00		126.36
Painting.....	3.38	3.94		7.32
Tinning.....	20.44	5.00		25.44
Heating.....			10.23	10.23
Gas engine.....	27.70	8.70	21.90	58.30
Material drawn by janitor.....		.75		.75
Total.....	100.88	95.39	32.13	228.40
<i>Birney School Annex.</i>				
Carpentering.....	50.00	23.23		73.23
Painting.....	143.76	44.87		188.63
Total.....	193.76	68.10		261.86

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Blair School, No. 50.</i>				
Carpentering.....	\$313.50	\$266.96	.....	\$580.46
Painting.....	29.30	8.07	.....	37.37
Tinning.....	302.71	150.12	.....	452.83
Heating.....	.....	.....	\$11.24	11.24
Grading.....	4.50	1.17	.....	5.67
Gas engine.....	24.50	10.82	.....	35.32
Material drawn by janitor.....	.....	5.99	.....	5.99
Total.....	674.51	443.13	11.24	1,128.88
<i>Blake School, No. 61.</i>				
Carpentering.....	166.76	171.31	.....	338.07
Painting.....	20.57	11.30	.....	31.87
Tinning.....	142.76	78.96	.....	221.72
Heating.....	.....	.....	128.78	128.78
Grading.....	13.13	2.93	.....	16.06
Material drawn by janitor.....	.....	1.25	.....	1.25
Total.....	343.22	265.75	128.78	737.75
<i>Blow School, No. 145.</i>				
Carpentering.....	13.00	9.25	.....	22.25
Painting.....	8.00	3.28	.....	11.28
Heating.....	.....	.....	27.44	27.44
Gas engine.....	9.00	.91	.....	9.91
Material drawn by janitor.....	.....	.18	.....	.18
Total.....	30.00	13.62	27.44	71.06
<i>A. Bowen School, No. 109.</i>				
Carpentering.....	93.47	114.93	.....	208.40
Painting.....	18.01	19.34	.....	37.35
Tinning.....	28.94	17.62	.....	46.56
Heating.....	.50	1.32	60.37	62.19
Grading.....	.56	1.14	.....	1.70
Gas engine.....	25.00	7.47	.....	32.47
Material drawn by janitor.....	.....	1.25	.....	1.25
Total.....	166.48	163.07	60.37	389.92
<i>S. J. Bowen School, No. 123.</i>				
Carpentering.....	69.76	16.17	.....	85.93
Painting.....	28.96	6.60	.....	35.56
Tinning.....	40.94	17.88	.....	58.82
Steam fitting.....	34.32	19.78	168.50	222.60
Grading.....	16.50	1.35	.....	17.85
Erect iron fence.....	.....	.....	364.80	364.80
Material drawn by janitor.....	.....	3.93	.....	3.93
Total.....	190.48	65.71	533.30	789.49
<i>Bradley School, No. 60.</i>				
Carpentering.....	166.08	318.63	.....	484.71
Painting.....	156.51	36.09	.....	192.60
Tinning.....	14.31	7.07	.....	21.38
Heating.....	.....	.....	179.49	179.49
Total.....	336.90	361.79	179.49	878.18
<i>Brent School, No. 46.</i>				
Carpentering.....	56.45	50.35	.....	106.80
Painting.....	12.88	2.20	.....	15.08
Tinning.....	15.82	2.35	.....	18.17
Heating.....	.....	.....	9.76	9.76
Gas engine.....	19.00	.06	.....	19.06
Cast-iron stairways.....	.....	.....	265.00	265.00
Material drawn by janitor.....	.....	8.56	.....	8.56
Total.....	104.15	63.52	274.76	442.43
<i>Briggs School, No. 75.</i>				
Carpentering.....	51.11	22.98	.....	74.09
Painting.....	9.05	10.66	.....	19.71
Tinning.....	7.93	4.67	.....	12.60
Repair of entrance rail.....	1.00	.61	.....	1.61
Heating.....	.....	.....	179.49	179.49
Material drawn by janitor.....	.....	4.44	.....	4.44
Total.....	69.09	43.36	179.49	291.94



*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Brightwood School, No. 104.</i>				
Carpentering.....	\$77.88	\$142.81		\$220.69
Painting.....	14.88	3.99		18.87
Tinning.....	12.00	5.19		17.19
Steam fitting.....	.50	7.75		8.25
Heating.....			\$123.32	123.32
Grading.....	.75			.75
Material drawn by janitor.....		1.47		1.47
Total.....	106.01	161.21	123.32	390.54
<i>Brightwood Park School, No. 151.</i>				
Carpentering.....	68.25	26.24		94.49
Painting.....	7.13	9.82		16.95
Tinning.....	15.50	6.18		21.68
Grading.....	36.00			36.00
Gas engine.....	13.76	5.64		19.40
Total.....	140.64	47.88		188.52
<i>Brookland School, No. 103.</i>				
Carpentering.....	99.13	105.60		204.73
Painting.....	6.00	1.04		7.04
Tinning.....	7.44	3.41		10.85
Steam fitting.....	6.00	6.81		12.81
Miscellaneous.....	4.25	.48		4.73
Material drawn by janitor.....		6.47		6.47
Total.....	122.82	123.81		246.63
<i>Bruce School, No. 112.</i>				
Carpentering.....	24.50	4.68		29.18
Painting.....	4.94	2.43		7.37
Tinning.....	5.94	3.65		9.59
Heating.....			3.25	3.25
Gas engine.....	22.26	5.10	19.95	47.31
Material drawn by janitor.....		6.58		6.58
Total.....	57.64	22.44	23.20	103.28
<i>Bryan School, No. 155.</i>				
Carpentering.....	28.00	5.79		33.79
Painting.....	6.06	.98		7.04
Tinning.....	26.63	4.29		30.92
Miscellaneous.....	4.00	16.86		20.86
Grading.....	11.63		112.00	123.63
Gas engine.....	29.76	4.11		33.87
Material drawn by janitor.....		8.52		8.52
Total.....	106.08	40.55	112.00	258.63
<i>Buchanan School, No. 96.</i>				
Carpentering.....	35.53	36.23		71.76
Painting.....	8.82	2.35		11.17
Tinning.....	23.25	3.63		26.88
Heating.....			54.66	54.66
Repair iron gate.....	1.25			1.25
Grading.....	3.56			3.56
Gas engine.....	4.81			4.81
Material drawn by janitor.....		10.49		10.49
Total.....	77.22	52.70	54.66	184.58
<i>Bunker Hill Road School, No. 47.</i>				
Carpentering.....	30.00	12.50		42.50
Painting.....	.50	.18		.68
Tinning.....	4.75	2.01		6.76
Total.....	35.25	14.69		49.94
<i>Burrville School, No. 91.</i>				
Carpentering.....	6.50	2.59		9.09
Painting.....	2.94	.54		3.48
Tinning.....	4.51	1.21		5.72
Total.....	13.95	4.34		18.29

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Business High School, No. 144.</i>				
Carpentering.....	\$41.13	\$36.56	.....	\$77.69
Painting.....	27.01	17.33	.....	44.34
Tinning.....	31.69	19.24	.....	50.93
Steam fitting.....	13.97	8.11	\$112.00	134.08
Repair fence.....	2.00	7.43	.....	9.43
Grading.....	30.00	.....	.....	30.00
One marble riser.....	.....	4.50	.....	4.50
Material drawn by janitor.....	.....	9.89	.....	9.89
Total.....	145.80	103.06	112.00	360.86
<i>Carbery School, No. 58.</i>				
Carpentering.....	183.72	156.95	.....	340.67
Painting.....	19.61	9.88	.....	29.49
Tinning.....	200.76	90.65	.....	291.41
Heating.....	.....	.....	8.89	8.89
Repair of iron gate.....	3.75	.41	.....	4.16
Grading.....	1.50	.....	.....	1.50
Material drawn by janitor.....	.....	1.20	.....	1.20
Total.....	409.34	259.09	8.89	677.32
<i>Cardozo School, No. 148.</i>				
Carpentering.....	13.44	10.75	.....	24.19
Painting.....	10.37	7.10	.....	17.47
Tinning.....	14.07	3.78	.....	17.85
Heating.....	.....	.....	16.02	16.02
Gas engine.....	11.19	2.55	.....	13.74
Material drawn by janitor.....	.....	2.42	.....	2.42
Total.....	49.07	26.60	16.02	91.69
<i>Central High School, No. 43.</i>				
Carpentering.....	224.16	110.96	.....	335.12
Painting.....	631.85	122.07	.....	753.92
Tinning.....	20.76	9.47	.....	30.23
Steam fitting.....	67.25	29.29	.....	96.54
Repair of railing.....	4.75	2.90	.....	7.65
Repair of fire escape.....	.50	.....	.....	.50
Material drawn by janitor.....	.....	12.76	.....	12.76
New boilers.....	.....	.....	1,293.00	1,293.00
Total.....	949.27	287.45	1,293.00	2,529.72
<i>Chain Bridge Road School, No. 113.</i>				
Carpentering.....	20.73	8.72	.....	29.45
Painting.....	3.32	.14	.....	3.46
Tinning.....	2.75	1.46	.....	4.21
Material drawn by janitor.....	.....	.75	.....	.75
Total.....	26.80	11.07	.....	37.87
<i>Chevy Chase School, No. 113.</i>				
Carpentering.....	73.64	14.15	.....	87.79
Tinning.....	3.82	.63	.....	4.45
Heating.....	.....	.....	18.25	18.25
Grading.....	11.44	.....	.....	11.44
Material drawn by janitor.....	.....	.75	.....	.75
Total.....	88.90	15.53	18.25	122.68
<i>Conduit Road School, No. 25.</i>				
Carpentering.....	5.82	9.62	.....	15.44
Painting.....	3.00	.27	.....	3.27
Tinning.....	.75	.39	.....	1.14
Total.....	9.57	10.28	.....	19.85
<i>Congress Heights School, No. 111.</i>				
Carpentering.....	60.57	60.41	.....	120.98
Painting.....	7.19	2.40	.....	9.59
Tinning.....	10.31	4.72	.....	15.03
Heating.....	.....	.....	15.81	15.81
Material drawn by janitor.....	.....	3.37	.....	3.37
Total.....	78.07	70.90	15.81	164.78

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>H. D. Cooke School, No. 154.</i>				
Carpentering.....	\$128.65	\$22.23	.....	\$150.88
Painting.....	9.44	1.45	.....	10.89
Tinning.....	21.13	2.24	.....	23.37
Hand rail, iron step, and beams.....	14.75	19.51	.....	34.26
Gas engine.....	41.50	3.82	.....	45.32
Service pipe.....	.....	.....	\$141.50	141.50
Material drawn by janitor.....	.....	7.02	.....	7.02
Total.....	215.47	56.27	141.50	413.24
<i>J. F. Cook School, No. 30.</i>				
Carpentering.....	74.13	128.94	.....	203.07
Painting.....	10.63	6.01	.....	16.64
Heating.....	.....	.....	46.50	46.50
Repair of fence and gate.....	.75	.....	.....	.75
Grading.....	2.25	.....	.....	2.25
Gas engine.....	26.33	21.60	19.95	67.88
Material drawn by janitor.....	.....	1.56	.....	1.56
Total.....	114.09	158.11	66.45	338.65
<i>Corcoran School, No. 68.</i>				
Carpentering.....	73.41	53.28	.....	126.69
Painting.....	8.00	2.99	.....	10.99
Tinning.....	9.06	5.05	.....	14.11
Heating.....	.....	.....	225.60	225.60
Material drawn by janitor.....	.....	.75	.....	.75
Total.....	90.47	62.07	225.60	378.14
<i>Cranch School, No. 137.</i>				
Carpentering.....	20.88	12.17	.....	33.05
Painting.....	12.69	9.33	.....	22.02
Tinning.....	6.06	.90	.....	6.96
Steam fitting.....	22.13	16.97	.....	39.10
Grading.....	6.25	.55	.....	6.80
Material drawn by janitor.....	.....	5.69	.....	5.69
Total.....	68.01	45.61	.....	113.62
<i>Curtis School, No. 26.</i>				
Carpentering.....	205.72	248.64	.....	454.36
Painting.....	44.32	20.27	.....	64.59
Tinning.....	9.85	.76	.....	10.71
Steam fitting.....	12.00	2.55	152.00	166.55
Repair of gate and fence.....	6.50	.24	.....	6.74
Cement work.....	.....	.....	100.00	100.00
Material drawn by janitor.....	.....	5.09	.....	5.09
Total.....	278.49	277.55	252.00	808.04
<i>Deanwood School, No. 152.</i>				
Carpentering.....	38.38	85.33	.....	123.71
Painting.....	14.45	1.01	.....	15.46
Tinning.....	1.50	.68	.....	2.18
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	54.33	89.02	.....	143.35
<i>Dennison School, No. 52.</i>				
Carpentering.....	53.90	115.83	.....	169.73
Painting.....	35.63	8.70	.....	44.33
Tinning.....	9.06	5.40	.....	14.46
Steam fitting.....	5.44	2.97	.....	8.41
New boilers.....	.....	.....	1,303.00	1,303.00
Material drawn by janitor.....	.....	10.21	.....	10.21
Total.....	104.03	143.11	1,303.00	1,550.14
<i>Dent School, No. 120.</i>				
Carpentering.....	353.09	97.10	.....	450.19
Painting.....	46.07	22.19	.....	68.26
Tinning.....	6.94	1.29	.....	8.23
Heating.....	.....	.....	6.00	6.00
Repair of fence.....	3.00	.13	.....	3.13
Gas engine.....	22.76	7.53	.....	30.29
Material drawn by janitor.....	.....	8.58	.....	8.58
Total.....	431.86	136.82	6.00	574.68

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Douglass School, No. 85.</i>				
Carpentering.....	\$13.62	\$11.85	.....	\$25.47
Painting.....	106.91	36.00	.....	142.91
Tinning.....	11.00	4.73	.....	15.73
Heating.....	.....	.....	\$25.73	25.73
Gas engine.....	6.76	.31	.....	7.07
Material drawn by janitor.....	.....	3.07	.....	3.07
Total.....	138.29	55.96	25.73	219.98
<i>Eastern High School, No. 85.</i>				
Carpentering.....	484.45	528.60	.....	1,013.05
Painting.....	433.32	77.73	.....	511.05
Tinning.....	28.68	7.14	.....	35.82
Steam fitting.....	52.97	18.09	.....	71.06
Grading.....	2.25	1.12	.....	3.37
Material drawn by janitor.....	.....	5.07	.....	5.07
Total.....	1,001.67	637.75	.....	1,639.42
<i>Eckington School, No. 116.</i>				
Carpentering.....	67.51	90.40	.....	157.91
Painting.....	8.32	6.34	.....	14.66
Tinning.....	20.69	4.68	.....	25.37
Heating.....	.....	.....	98.89	98.89
Grading.....	43.88	.....	.....	43.88
Gas engine.....	8.00	5.71	.....	13.71
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	148.40	109.13	98.89	356.42
<i>Edmonds School, No. 135.</i>				
Carpentering.....	93.89	92.53	.....	186.42
Painting.....	2.06	1.28	.....	3.34
Tinning.....	5.63	1.57	.....	7.20
Heating.....	.....	.....	34.64	34.64
Wickets around walk.....	6.25	14.30	.....	20.55
Grading.....	3.00	.....	.....	3.00
Gas engine.....	26.31	10.56	.....	36.87
Material drawn by janitor.....	.....	5.84	.....	5.84
Total.....	137.14	126.08	34.64	297.86
<i>Emery School, No. 133.</i>				
Carpentering.....	28.75	13.18	.....	41.93
Painting.....	7.45	.60	.....	8.05
Tinning.....	17.88	5.56	.....	23.44
Heating.....	.....	.01	.....	.76
Repair of iron gate.....	.75	.....	.....	.76
Steam fitting.....	1.97	1.96	349.00	352.93
Grading.....	7.69	.....	.....	7.69
Material drawn by janitor.....	.....	10.95	.....	10.95
Total.....	64.49	32.26	349.00	445.75
<i>Fillmore School.</i>				
Carpentering.....	57.82	96.61	.....	154.43
Painting.....	18.39	5.01	.....	23.40
Tinning.....	9.63	3.12	.....	12.75
Heating.....	.....	.....	134.54	134.54
Material drawn by janitor.....	.....	2.31	.....	2.31
Total.....	85.84	107.05	134.54	327.43
<i>Force School, No. 92.</i>				
Carpentering.....	67.54	68.47	.....	136.01
Painting.....	146.70	33.24	.....	179.94
Tinning.....	243.19	104.49	.....	347.68
Steam fitting.....	122.75	136.77	.....	259.52
Repair of fire escape.....	.50	.79	.....	1.29
Grading.....	21.13	.96	.....	22.09
Material drawn by janitor.....	.....	5.52	.....	5.52
Total.....	601.81	350.24	.....	952.05
<i>Fort Slocum School.</i>				
Carpentering.....	29.76	32.73	.....	62.49
Painting.....	18.82	17.17	.....	35.99
Tinning.....	2.06	.....	.....	2.06
Total.....	50.64	49.90	.....	100.54

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Franklin School, No. 15.</i>				
Carpentering.....	\$327.13	\$62.09	.....	\$389.22
Painting.....	246.67	37.33	.....	284.00
Tinning.....	33.50	8.97	.....	42.47
Heating.....	1.25	.....	.....	1.25
Steam fitting.....	52.19	11.06	.....	63.25
Material drawn by janitor.....	.....	6.64	.....	6.64
Total.....	660.74	126.09	.....	786.83
<i>B. B. French School, No. 141.</i>				
Carpentering.....	40.95	32.34	.....	73.29
Painting.....	35.38	13.58	.....	48.96
Heating.....	.....	.....	\$324.72	324.72
Grading.....	.38	.....	.....	.38
Gas engine.....	10.26	.06	.....	10.32
Total.....	86.97	45.98	324.72	457.67
<i>Gage School, No. 143.</i>				
Carpentering.....	28.00	35.38	.....	63.38
Painting.....	6.88	4.68	.....	11.56
Tinning.....	16.94	2.54	.....	19.48
Heating.....	.....	.....	25.26	25.26
Gas engine.....	24.50	6.98	.....	31.48
Material drawn by janitor.....	.....	5.15	.....	5.15
Total.....	76.32	54.73	25.26	156.31
<i>Gales School, No. 36.</i>				
Carpentering.....	77.64	52.54	.....	130.18
Painting.....	229.46	32.13	.....	261.59
Tinning.....	59.57	12.94	.....	72.51
Steam fitting.....	11.14	8.97	.....	20.11
Changing location of fence.....	31.75	2.46	.....	34.21
Material drawn by janitor.....	.....	15.20	.....	15.20
Total.....	409.56	124.24	.....	533.80
<i>Garfield School, No. 106.</i>				
Carpentering.....	4.50	2.93	.....	7.43
Painting.....	3.94	1.78	.....	5.66
Tinning.....	20.62	21.38	.....	42.00
Gas engine.....	15.00	.79	.....	15.79
Repair of pump.....	5.00	3.50	.....	8.50
Material drawn by janitor.....	.....	.75	.....	.75
Total.....	49.06	31.07	.....	80.13
<i>Garnet School, No. 34.</i>				
Carpentering.....	129.92	31.42	.....	161.34
Painting.....	82.44	12.35	.....	94.79
Tinning.....	3.44	.29	.....	3.73
Steam fitting.....	1.81	12.66	.....	14.47
Material drawn by janitor.....	.....	3.87	.....	3.87
Total.....	217.61	60.59	.....	278.20
<i>Garrison School, No. 76.</i>				
Carpentering.....	225.01	117.53	.....	342.54
Painting.....	25.45	8.47	.....	33.92
Tinning.....	152.26	83.52	.....	235.78
Heating.....	.50	.62	11.16	12.28
Fastening hand rail.....	1.00	.01	.....	1.01
Grading.....	1.69	.....	.....	1.69
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	405.91	212.15	11.16	629.22
<i>Giddings School, No. 63.</i>				
Carpentering.....	220.89	118.89	.....	339.78
Painting.....	10.69	4.82	.....	15.51
Tinning.....	309.71	151.76	.....	461.47
Heating.....	.....	.....	48.10	48.10
Grading.....	1.50	1.33	.....	2.83
Material drawn by janitor.....	.....	1.25	.....	1.25
Total.....	542.79	278.05	48.10	868.94

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Good Hope School, No. 73.</i>				
Carpentering.....	\$17.00	\$30.68	.....	\$47.68
Painting.....	47.70	27.90	.....	75.60
Tinning.....	27.56	7.51	.....	35.07
Material drawn by janitor.....		.75	.....	.75
Total.....	92.26	66.84	.....	159.10
<i>Grant School, No. 41.</i>				
Carpentering.....	173.59	185.96	.....	359.55
Painting.....	27.75	5.14	.....	32.89
Tinning.....	251.75	212.33	.....	464.08
Heating.....			.....	
Steam fitting.....	300.31	555.27	.....	855.58
Grading.....	30.50	.61	.....	31.11
Material drawn by janitor.....		4.90	.....	4.90
Total.....	783.90	964.21	.....	1,748.11
<i>Greenleaf School, No. 105.</i>				
Carpentering.....	76.75	174.00	.....	250.75
Painting.....	8.38	2.27	.....	10.65
Tinning.....	28.75	12.14	.....	40.89
Heating.....			\$14.72	14.72
Grading.....	6.00	.23	.....	6.23
Gas engine.....	10.50	15.69	.....	26.19
Material drawn by janitor.....		5.34	.....	5.34
Total.....	130.38	209.67	14.72	354.77
<i>Hamilton School, No. 37.</i>				
Carpentering.....	37.75	25.27	.....	63.02
Painting.....	3.88	.99	.....	4.87
Tinning.....	6.25	6.62	.....	12.87
Material drawn by janitor.....		.75	.....	.75
Total.....	47.88	33.63	.....	81.51
<i>Harrison School, No. 84.</i>				
Carpentering.....	35.13	7.13	.....	42.26
Painting.....	20.39	1.71	.....	22.10
Tinning.....	22.20	29.81	.....	52.01
Heating.....			37.28	37.28
Material drawn by janitor.....		4.02	.....	4.02
Total.....	77.72	42.67	37.28	157.67
<i>Hayes School, No. 107.</i>				
Carpentering.....	16.00	14.83	.....	30.83
Painting.....	234.83	21.15	.....	255.98
Tinning.....	63.68	13.01	.....	76.69
Heating.....			32.03	32.03
Grading.....	3.38	.25	.....	3.63
Gas engine.....	10.50	11.45	.....	21.95
Material drawn by janitor.....		11.23	.....	11.23
Total.....	328.39	71.92	32.03	432.34
<i>Henry School, No. 33.</i>				
Carpentering.....	226.02	396.31	.....	622.33
Painting.....	182.70	48.58	.....	231.28
Tinning.....	2.75	1.81	.....	4.56
Steam fitting.....	37.31	18.37	.....	55.68
Material drawn by janitor.....		8.47	.....	8.47
Total.....	448.78	473.54	.....	922.32
<i>Hillsdale School.</i>				
Painting.....	.63	.84	.....	1.47
<i>Hilton School, No. 115.</i>				
Carpentering.....	41.52	33.97	.....	75.49
Painting.....	114.20	24.74	.....	138.94
Tinning.....	46.81	23.01	.....	69.82
Heating.....			21.08	21.08
Gas engine.....	27.59	9.45	19.95	56.99
Material drawn by janitor.....		2.02	.....	2.02
Total.....	230.12	93.19	41.03	364.34

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Hubbard School, No. 119.</i>				
Carpentering.....	\$344. 19	\$222. 27		\$566. 46
Painting.....	147. 70	51. 72		199. 42
Tinning.....	13. 38	1. 22		14. 60
Heating.....			\$21. 23	21. 23
Miscellaneous.....			15. 65	15. 65
Gas engine.....	51. 81	22. 13		73. 94
Material drawn by janitor.....		3. 11		3. 11
Total.....	557. 08	300. 45	36. 88	894. 41
<i>Hyde School, No. 147.</i>				
Carpentering.....	56. 44	41. 36		97. 80
Painting.....	45. 19	18. 21		63. 40
Tinning.....	5. 88	1. 10		6. 98
Heating.....			50. 70	50. 70
Gas engine.....	26. 13	21. 62		47. 75
Cement work.....			100. 00	100. 00
Material drawn by janitor.....		. 33		. 33
Total.....	133. 64	82. 62	150. 70	366. 96
<i>Ivy City School, No. 100.</i>				
Carpentering.....	28. 01	25. 36		53. 37
Painting.....	5. 44	. 75		6. 19
Tinning.....	14. 50	6. 70		21. 20
Repair pump.....	5. 00	. 60		5. 60
Total.....	52. 95	33. 41		86. 36
<i>Jackson School, No. 69.</i>				
Carpentering.....	135. 69	57. 83		193. 52
Painting.....	25. 73	5. 43		31. 16
Tinning.....	155. 90	70. 87		226. 77
Steam fitting.....			3. 37	3. 37
Heating.....			19. 92	19. 92
Grading.....	9. 38	2. 03		11. 41
Material drawn by janitor.....		. 75		. 75
Total.....	326. 70	136. 91	23. 29	486. 90
<i>Jefferson School, No. 23.</i>				
Carpentering.....	87. 53	58. 87		146. 40
Painting.....	34. 33	14. 65		48. 98
Tinning.....	79. 13	20. 21		99. 34
Heating.....	. 44			. 44
Steam fitting.....	415. 88	197. 68	90. 00	703. 56
Material drawn by janitor.....		7. 78		7. 78
Total.....	617. 31	299. 19	90. 00	1,006. 50
<i>Johnson School, No. 95.</i>				
Carpentering.....	45. 07	94. 83		139. 90
Painting.....	10. 19	2. 58		12. 77
Tinning.....	3. 69	. 94		4. 63
Heating.....			19. 45	19. 45
Material drawn by janitor.....		. 75		. 75
Total.....	58. 95	99. 10	19. 45	177. 50
<i>Johnson Annex, No. 21.</i>				
Heating.....			2. 46	2. 46
<i>Jones School, No. 77.</i>				
Carpentering.....	26. 32	7. 35		33. 67
Painting.....	5. 63	2. 17		7. 80
Tinning.....	3. 56	. 41		3. 97
Heating.....			31. 65	31. 65
Grading.....	1. 50	. 24		1. 74
Material drawn by janitor.....		9. 84		9. 84
Total.....	37. 01	20. 01	31. 65	88. 67
<i>Kenilworth School, No. 128.</i>				
Carpentering.....	43. 32	19. 50		62. 82
Painting.....	141. 68	35. 24		176. 92
Tinning.....	2. 07	. 27		2. 34
Heating.....			55. 57	55. 57
Repair motor.....	23. 69	7. 64		31. 33
Repair pump.....			8. 50	8. 50
Total.....	210. 76	62. 65	64. 07	337. 48

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Ketcham School, No. 149.</i>				
Carpentering.....	\$0.50	\$0.13		\$0.63
Painting.....	34.51	29.00		63.51
Tinning.....	5.00	1.26		6.26
Gas engine.....	16.00	5.65		21.65
Material drawn by janitor.....		1.45		1.45
Total.....	56.01	37.49		93.50
<i>Langdon School, No. 108.</i>				
Carpentering.....	75.00	84.20		159.20
Painting.....	123.64	64.85		188.49
Tinning.....	3.44	1.97		5.41
Heating.....		13.10		13.10
Grading.....	12.94		\$495.00	507.94
Material drawn by janitor.....		2.60		2.60
Total.....	215.02	166.72	495.00	876.74
<i>Langston School, No. 132.</i>				
Carpentering.....	18.00	22.96		40.96
Painting.....	8.07	5.61		13.68
Tinning.....	3.00			3.00
Heating.....			617.13	617.13
Gas engine.....	21.13	5.27		26.40
Material drawn by janitor.....		3.03		3.03
Total.....	50.20	36.87	617.13	704.20
<i>Lenox School, No. 67.</i>				
Carpentering.....	180.95	338.45		519.40
Painting.....	79.76	15.01		94.77
Tinning.....	45.31	2.19		47.50
Heating.....			23.87	23.87
Grading.....	1.50			1.50
Material drawn by janitor.....		5.37		5.37
Total.....	307.52	361.02	23.87	692.41
<i>Lincoln School, No. 18.</i>				
Carpentering.....	45.98	35.50		81.48
Painting.....	11.20	3.98		15.18
Tinning.....	2.19	.35		2.54
Heating.....	1.00			1.00
Repairs to fire escape.....	2.50	.13		2.63
Grading.....	5.00	1.92		6.92
Material drawn by janitor.....		5.03		5.03
Total.....	67.87	46.91		114.78
<i>Logan School, No. 90.</i>				
Carpentering.....	130.70	93.99		224.69
Painting.....	28.01	7.05		35.06
Tinning.....	177.75	96.22		273.97
Heating.....			15.11	15.11
Grading.....	.75			.75
Total.....	337.21	197.26	15.11	549.58
<i>Lovejoy School, No. 124.</i>				
Carpentering.....	21.50	12.42		33.92
Painting.....	16.81	3.16		19.97
Tinning.....	2.38	.33		2.71
Heating.....			719.72	719.72
Repairing iron pipe rail.....	2.25	.03		2.28
Gas engine.....	33.00	18.18		51.18
Material drawn by janitor.....		2.00		2.00
Total.....	75.94	36.12	719.72	831.78
<i>Ludlow School, No. 142.</i>				
Carpentering.....	35.69	20.07		55.76
Painting.....	100.19	23.08		123.27
Tinning.....	5.50	1.31		6.81
Gas engine.....	43.50	15.57	21.90	80.97
Grading.....	3.75			3.75
Material drawn by janitor.....		3.29		3.29
Total.....	188.63	63.32	21.90	273.85



*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>M Street High School, No. 82.</i>				
Carpentering.....	\$233.02	\$216.94		\$449.96
Painting.....	132.58	37.20		169.78
Heating.....	65.63	90.53	\$10.85	167.01
Material drawn by janitor.....		2.29		2.29
Total.....	431.23	346.96	10.85	789.04
<i>Madison School, No. 71.</i>				
Carpentering.....	176.08	98.21		274.29
Painting.....	20.13	4.77		24.90
Tinning.....	137.76	82.21		219.97
Heating.....			22.47	22.47
Grading.....	4.13	.49		4.62
Material drawn by janitor.....		3.08		3.08
Total.....	338.10	188.76	22.47	549.33
<i>Magruder School, No. 62.</i>				
Carpentering.....	183.00	62.88		245.88
Painting.....	23.46	9.51		32.97
Tinning.....	178.82	90.93		269.75
Heating.....			99.00	99.00
Material drawn by janitor.....		2.00		2.00
Total.....	385.28	165.32	99.00	649.60
<i>Mauzy School, No. 55.</i>				
Carpentering.....	78.30	121.76		200.06
Painting.....	28.32	3.66		31.98
Tinning.....	15.88	9.52		25.40
Heating.....			35.10	35.10
Repairing iron fence.....	.75			.75
Gas engine.....	42.75	23.12	19.95	85.82
Material drawn by janitor.....		3.66		3.66
Total.....	166.00	161.72	55.05	382.77
<i>McCormick School, No. 16.</i>				
Carpentering.....	7.50	14.44		21.94
Painting.....	3.50	.83		4.33
Heating.....			41.00	41.00
Total.....	11.00	15.27	41.00	67.27
<i>McKinley School, No. 30.</i>				
Carpentering.....	45.51	23.15		68.66
Painting.....	17.07	13.86		30.93
Tinning.....	2.06	1.91		3.97
Steam fitting.....	10.56			10.56
Grading.....	18.13			18.13
Material drawn by janitor.....		17.79		17.79
Total.....	93.33	56.71		150.04
<i>Military Road School, No. 8.</i>				
Carpentering.....	47.12	44.69		91.81
Painting.....	8.09	.86		9.55
Tinning.....	3.44	1.08		4.52
Material drawn by janitor.....		.75		.75
Total.....	59.25	47.38		106.63
<i>Monroe School, No. 72.</i>				
Carpentering.....	171.57	53.41		224.98
Painting.....	25.06	3.28		28.34
Tinning.....	155.31	79.88		235.19
Heating.....			16.34	16.34
Grading.....	9.94			9.94
Material drawn by janitor.....		.55		.55
Total.....	361.88	137.12	16.34	515.34
<i>Montgomery School, No. 140.</i>				
Carpentering.....	31.50	35.73		67.23
Painting.....	92.69	28.21		120.90
Heating.....			13.25	13.25
Grading.....	12.00			12.00
Gas engine.....	13.50	3.38		16.88
Material drawn by janitor.....		5.49		5.49
Total.....	149.69	72.81	13.25	235.75

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Morgan School, No. 125.</i>				
Carpentering.....	\$24.47	\$15.94	.....	\$40.41
Painting.....	5.64	3.48	.....	9.12
Tinning.....	9.63	2.00	.....	11.63
Heating.....	.....	.....	\$18.68	18.68
Repairing hand rails.....	2.00	.....	.....	2.00
Gas engine.....	18.25	7.53	.....	25.78
Total.....	59.99	28.95	18.68	107.62
<i>Morse School, No. 44.</i>				
Carpentering.....	101.10	114.66	.....	215.76
Painting.....	26.47	7.55	.....	34.02
Tinning.....	18.07	14.44	.....	32.51
Heating.....	.....	.....	21.08	21.08
Grading.....	.90	.....	.....	.90
Gas engine.....	27.26	2.89	19.95	50.10
Material drawn by janitor.....	.....	1.50	.....	1.50
Total.....	173.80	141.04	41.03	355.87
<i>(Old) Mott School, No. 40.</i>				
Carpentering.....	71.21	63.22	.....	134.43
Painting.....	2.00	1.20	.....	3.20
Heating.....	.50	.03	.....	.53
Total.....	73.71	64.45	.....	138.16
<i>(New) Mott School, No. 153.</i>				
Carpentering.....	16.51	.34	.....	16.85
Painting.....	78.32	16.26	.....	94.58
Tinning.....	5.13	1.68	.....	6.81
Grading.....	101.50	.38	.....	101.88
Gas engine.....	14.87	3.50	.....	18.37
Total.....	216.33	22.16	.....	238.49
<i>Orr School, No. 122.</i>				
Carpentering.....	8.69	14.02	.....	22.71
Painting.....	3.32	1.11	.....	4.43
Tinning.....	8.25	5.65	.....	13.90
Heating.....	.....	.....	151.82	151.82
Grading.....	10.00	.....	.....	10.00
Gas engine.....	.50	.....	.....	.50
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	30.76	22.78	151.82	205.36
<i>Patterson School, No. 93.</i>				
Carpentering.....	4.00	1.50	.....	5.50
Painting.....	23.19	11.01	.....	34.20
Heating.....	.....	.....	3.49	3.49
Repairing rail and gate.....	3.25	.38	.....	3.63
Material drawn by janitor.....	.....	2.53	.....	2.53
Total.....	30.44	15.42	3.49	49.35
<i>Payne School, No. 98.</i>				
Carpentering.....	51.01	34.03	.....	85.04
Painting.....	26.75	6.52	.....	33.27
Tinning.....	4.13	1.18	.....	5.31
Heating.....	.....	.....	20.84	20.84
Grading.....	3.00	.....	.....	3.00
Gas engine.....	29.33	9.05	19.95	58.33
Material drawn by janitor.....	.....	3.21	.....	3.21
Total.....	114.22	53.99	40.79	209.00
<i>Peabody School, No. 31.</i>				
Carpentering.....	277.92	367.34	.....	645.26
Painting.....	38.19	7.30	.....	45.49
Tinning.....	21.63	20.36	.....	41.99
Heating.....	34.87	5.20	234.66	274.73
Miscellaneous.....	.....	3.25	.....	3.25
Material drawn by janitor.....	.....	3.67	.....	3.67
Total.....	372.61	407.12	234.66	1,014.39

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Petworth School, No. 131.</i>				
Carpentering.....	\$31.00	\$13.74	.....	\$44.74
Painting.....	7.69	2.88	.....	10.57
Heating.....	.....	.....	\$11.78	11.78
Gas engine.....	16.39	.26	.....	16.65
Material drawn by janitor.....	.....	4.46	.....	4.46
Total.....	55.08	21.34	11.78	88.20
<i>Phelps School, No. 57.</i>				
Carpentering.....	358.18	145.81	.....	503.99
Painting.....	24.50	8.66	.....	33.16
Tinning.....	158.63	82.35	.....	240.98
Heating.....	.....	.....	335.24	335.24
Repairing hand rail.....	1.00	.29	.....	1.29
Grading.....	180.97	.23	.....	181.20
Total.....	723.28	237.34	335.24	1,295.86
<i>Phillips School, No. 81.</i>				
Carpentering.....	202.44	62.32	.....	264.76
Painting.....	57.37	9.88	.....	67.25
Tinning.....	195.50	66.60	.....	262.10
Heating.....	.....	.....	36.97	36.97
Grading.....	.75	.....	.....	.75
Material drawn by janitor.....	.....	3.13	.....	3.13
Total.....	456.06	141.93	36.97	634.96
<i>Pierce School, No. 94.</i>				
Carpentering.....	26.94	91.32	.....	118.26
Painting.....	134.57	26.50	.....	161.07
Tinning.....	11.00	1.46	.....	12.46
Heating.....	.50	.47	2.71	3.68
Material drawn by janitor.....	.....	.21	.....	.21
Total.....	173.01	119.96	2.71	295.68
<i>Polk School, No. 86.</i>				
Carpentering.....	83.39	94.41	.....	177.80
Painting.....	99.44	19.61	.....	119.05
Tinning.....	2.88	.....	.....	2.88
Heating.....	.....	.....	76.80	76.80
Material drawn by janitor.....	.....	4.64	.....	4.64
Total.....	185.71	118.66	76.80	381.17
<i>Potomac School, No. 17.</i>				
Carpentering.....	21.75	10.76	.....	32.51
Painting.....	1.50	.30	.....	1.80
Tinning.....	8.37	7.11	.....	15.48
Material drawn by janitor.....	.....	2.50	.....	2.50
Total.....	31.62	20.67	.....	52.29
<i>Randall School, No. 28.</i>				
Carpentering.....	106.25	226.52	.....	332.77
Painting.....	18.64	14.86	.....	33.50
Tinning.....	58.76	10.87	.....	69.63
Heating.....	10.98	6.32	2.71	20.01
Repairing fire escape.....	.50	.02	.....	.52
Material drawn by janitor.....	.....	2.95	.....	2.95
Total.....	195.13	261.54	2.71	459.38
<i>Reno School, No. 139.</i>				
Carpentering.....	20.63	24.78	.....	45.41
Painting.....	3.25	1.60	.....	4.85
Heating.....	.....	.....	29.60	29.60
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	23.88	28.38	29.60	81.86
<i>Reservoir School, No. 110.</i>				
Carpentering.....	39.75	28.02	.....	67.77
Painting.....	23.82	13.09	.....	36.88
Tinning.....	98.13	289.78	.....	387.91
Total.....	161.70	330.86	.....	492.56

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Ross School, No. 146.</i>				
Carpentering.....	\$120.62	\$44.67	.....	\$165.29
Painting.....	78.94	21.65	.....	100.59
Tinning.....	6.32	2.25	.....	8.57
Heating.....	.....	.....	\$4.11	4.11
Gas engine.....	3.00	8.14	.....	11.14
Material drawn by janitor.....	.....	1.58	.....	1.58
Total.....	208.88	78.29	4.11	291.28
<i>Seaton School, No. 22.</i>				
Carpentering.....	163.49	259.01	.....	422.50
Painting.....	33.27	10.13	.....	43.40
Heating.....	18.51	2.50	.....	21.01
Grading.....	6.69	.....	.....	6.69
Material drawn by janitor.....	.....	3.66	.....	3.66
Total.....	221.96	275.30	.....	497.26
<i>Simmons School, No. 134.</i>				
Carpentering.....	19.06	19.95	.....	39.01
Painting.....	7.13	3.22	.....	10.35
Tinning.....	10.26	1.21	.....	11.47
Heating.....	.....	.....	54.17	54.17
Gas engine.....	7.00	3.44	.....	10.44
Material drawn by janitor.....	.....	2.86	.....	2.86
Total.....	43.45	30.68	54.17	128.30
<i>Slater School, No. 80.</i>				
Carpentering.....	31.50	22.30	.....	53.80
Painting.....	13.44	1.16	.....	14.60
Tinning.....	7.44	5.04	.....	12.48
Heating.....	.....	.....	5.58	5.58
Repairing iron railing.....	.75	.08	.....	.83
Total.....	53.13	28.58	5.58	87.29
<i>Smallwood School, No. 64.</i>				
Carpentering.....	28.95	17.47	.....	46.42
Painting.....	20.75	6.42	.....	27.17
Tinning.....	6.87	4.23	.....	11.10
Heating.....	.....	.....	48.83	48.83
Grading.....	2.25	.45	.....	2.70
Material drawn by janitor.....	.....	3.72	.....	3.72
Total.....	58.82	32.29	48.83	139.94
<i>H. Smothers School, No. 56.</i>				
Carpentering.....	46.50	50.79	.....	97.29
Painting.....	10.44	2.49	.....	12.93
Tinning.....	9.89	2.06	.....	11.95
Grading.....	30.75	.....	.....	30.75
Material drawn by janitor.....	.....	2.00	.....	2.00
Total.....	97.58	57.34	.....	154.92
<i>Stanton School, No. 138.</i>				
Carpentering.....	20.00	31.97	.....	51.97
Tinning.....	13.32	3.09	.....	16.41
Painting.....	125.40	33.40	.....	158.80
Heating.....	.....	.....	37.28	37.28
Material drawn by janitor.....	.....	3.54	.....	3.54
Total.....	158.72	72.00	37.28	268.00
<i>Stevens School, No. 97.</i>				
Carpentering.....	99.54	39.57	.....	139.11
Painting.....	63.70	27.56	.....	91.26
Tinning.....	65.95	16.96	.....	82.91
Heating.....	19.57	19.59	.....	39.16
Repairing iron steps.....	2.25	.71	.....	2.96
Material drawn by janitor.....	.....	3.25	.....	3.25
Total.....	251.01	107.64	.....	358.65

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Sumner School, No. 19.</i>				
Carpentering.....	\$99.45	\$94.08		\$193.53
Painting.....	48.94	14.37		63.31
Tinning.....	28.75	7.26		36.01
Heating.....	24.38	16.44		40.82
Material drawn by janitor.....		5.49		5.49
Total.....	201.52	137.64		339.16
<i>Syphaz School, No. 126.</i>				
Carpentering.....	31.26	33.94		65.20
Painting.....	7.70	2.44		10.14
Tinning.....	34.81	11.18		45.99
Heating.....	5.00	1.50		6.50
Grading.....	1.88			1.88
Total.....	80.65	49.06		129.71
<i>Takoma School, No. 118.</i>				
Carpentering.....	4.00	8.81		12.81
Painting.....	2.00	1.31		3.31
Tinning.....	18.06	4.47		22.53
Heating.....			\$29.84	29.84
Gas engine.....	26.00	24.47	19.95	70.42
Total.....	50.06	39.06	49.79	138.91
<i>Taylor School, No. 88.</i>				
Carpentering.....	89.95	95.90		185.85
Painting.....	22.80	2.99		25.79
Tinning.....	24.89	6.00		30.89
Heating.....			6.31	6.31
Material drawn by janitor.....		5.21		5.21
Total.....	137.64	110.10	6.31	254.05
<i>Tenley School, No. 102.</i>				
Carpentering.....	149.33	150.18		299.51
Painting.....	15.08	5.02		20.10
Tinning.....	10.32	5.28		15.60
Heating.....	1.50	.99		2.49
Grading.....	239.69			239.69
Material drawn by janitor.....		3.47		3.47
Total.....	415.92	164.94		580.86
<i>Tenley School Annex.</i>				
Carpentering.....	16.38	11.29		27.67
Painting.....	79.19	37.36		116.55
Total.....	95.57	48.65		144.22
<i>Thomson School, No. 29.</i>				
Carpentering.....	8.01	3.98		11.99
Painting.....	4.31	1.33		5.64
Tinning.....	8.38	.80		9.18
Heating.....	1.00	10.40	13.77	25.17
Material drawn by janitor.....		1.25		1.25
Total.....	21.70	17.76	13.77	53.23
<i>Threlkeld School, No. 14.</i>				
Carpentering.....	99.54	34.92		134.46
Painting.....	3.31	1.22		4.53
Tinning.....	141.69	59.80		201.49
Material drawn by janitor.....		2.00		2.00
Total.....	244.54	97.94		342.48
<i>Toner School, No. 114.</i>				
Carpentering.....	136.53	16.54		153.07
Painting.....	63.19	25.31		88.50
Tinning.....	233.01	169.29		402.30
Heating.....			24.26	24.26
Repairing hand rails.....	1.25			1.25
Gas engine.....	49.63	24.47	19.95	94.05
Material drawn by janitor.....		6.64		6.64
Total.....	483.61	242.25	44.21	770.07

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Towers School, No. 59.</i>				
Carpentering.....	\$203.89	\$127.33		\$331.22
Painting.....	26.00	9.97		35.97
Tinning.....	3.44	.59		4.03
Heating.....			\$313.96	313.96
Grading.....	3.75	.14		3.89
Material drawn by janitor.....		2.00		2.00
Total.....	237.08	140.03	313.96	691.07
<i>Twining School, No. 45.</i>				
Carpentering.....	35.34	31.21		66.55
Painting.....	26.00	12.47		38.47
Tinning.....	2.75	1.35		4.10
Heating.....			70.29	70.29
Gas engine.....	28.19	4.84	19.95	52.98
Material drawn by janitor.....		1.25		1.25
Total.....	92.28	51.12	90.24	233.64
<i>Tyler School, No. 83.</i>				
Carpentering.....	30.50	23.22		53.72
Painting.....	1.44	.65		2.09
Tinning.....	4.25	2.07		6.32
Heating.....			24.64	24.64
Grading.....	3.56			3.56
Material drawn by janitor.....		2.87		2.87
Total.....	39.75	28.81	24.64	93.20
<i>Van Buren School, No. 87.</i>				
Carpentering.....	204.32	90.81		295.13
Painting.....	18.76	6.06		24.82
Tinning.....	364.39	175.89		540.28
Heating.....			129.04	129.04
Material drawn by janitor.....		3.75		3.75
Total.....	587.47	276.51	129.04	993.02
<i>Van Buren Annex, No. 38.</i>				
Carpentering.....	107.32	237.22		344.54
Painting.....	2.50	1.21		3.71
Total.....	109.82	238.43		348.25
<i>Van Ness School, No. 150.</i>				
Carpentering.....	111.97	95.57		207.54
Painting.....	8.07	1.73		9.80
Tinning.....	17.07	43.71		60.78
Heating.....			8.76	8.76
Tighten hand rail.....	.75			.75
Grading.....	4.38	.07		4.45
Gas engine.....	17.00	4.58		21.58
Material drawn by janitor.....		1.70		1.70
Total.....	159.24	147.36	8.76	315.36
<i>Wallach School, No. 4.</i>				
Carpentering.....	197.67	208.37		406.04
Painting.....	60.14	18.00		78.14
Tinning.....	47.21	6.80		54.01
Heating.....	3.25	1.23		4.48
Miscellaneous.....	1.75	.25		2.00
Material drawn by janitor.....		6.66		6.66
Total.....	310.02	241.31		551.33
<i>Webb School, No. 121.</i>				
Carpentering.....	12.50	37.27		49.77
Painting.....	14.17	6.60		20.77
Tinning.....	3.44	1.63		5.07
Repairing entrance rails.....	2.00	4.16		6.16
Gas engine.....	22.00	8.31		30.31
Material drawn by janitor.....		5.99		5.99
Total.....	54.11	63.96		118.07

*Repairs and improvements to school buildings and grounds, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>Webster School, No. 51.</i>				
Carpentering.....	\$68.51	\$113.52		\$182.03
Painting.....	304.07	38.67		342.74
Tinning.....	157.56	69.25		226.81
Heating.....	18.54	31.37	\$109.00	158.91
Total.....	548.68	252.81	109.00	910.49
<i>Weightman School, No. 54.</i>				
Carpentering.....	11.81	43.22		55.03
Painting.....	10.26	4.16		14.42
Tinning.....	9.75	2.85		12.60
Heating.....	18.25	29.02	1.16	48.43
Grading.....	3.00			3.00
Material drawn by janitor.....		2.00		2.00
Total.....	53.07	81.25	1.16	135.48
<i>Western High School, No. 117.</i>				
Carpentering.....	411.65	197.19		608.84
Painting.....	69.35	21.40		90.75
Tinning.....	16.06	8.16		24.22
Heating.....	30.69	16.07		46.76
Repairing iron fence.....	2.00	.13		2.13
Material drawn by janitor.....		12.45		12.45
Total.....	529.75	255.40		785.15
<i>Wheatley School, No. 136.</i>				
Carpentering.....	8.50	6.52		15.02
Painting.....	7.44	2.56		10.00
Tinning.....	6.88	1.00		7.88
Heating.....			13.87	13.87
Gas engine.....	21.06	1.61	21.90	44.57
Material drawn by janitor.....		8.19		8.19
Total.....	43.88	19.88	35.77	99.53
<i>Wilson School, No. 89.</i>				
Carpentering.....	106.15	49.91		156.06
Painting.....	15.57	7.86		23.43
Tinning.....	.44			.44
Heating.....			8.76	8.76
Grading.....	46.19			46.19
Material drawn by janitor.....		2.95		2.95
Total.....	168.35	60.72	8.76	237.83
<i>Woodburn School, No. 101.</i>				
Carpentering.....	34.89	88.16		123.05
Painting.....	1.63	1.07		2.70
Tinning.....	34.94	8.40		43.34
Heating.....			29.25	29.25
Material drawn by janitor.....		.75		.75
Total.....	71.46	98.38	29.25	199.09
<i>Wormley School, No. 49.</i>				
Carpentering.....	213.30	141.43		354.73
Painting.....	33.64	7.38		41.02
Tinning.....	148.50	66.88		215.38
Gas engine.....	39.75	16.00		55.75
Material drawn by janitor.....		2.21		2.21
Total.....	435.19	233.90		669.09

## SUMMARY.

Total accounted for on written orders.....	\$60,431.65
Miscellaneous time consumed in shop and schools.....	10,955.30
Material drawn from shop for use in various schools.....	2,152.27
Purchase of forage.....	378.84
Telephone service, residence of superintendent.....	24.00
Horseshoeing.....	83.21
Material on hand.....	836.60
Unexpended.....	138.13
Total.....	75,000.00

*Buildings and grounds, public schools, District of Columbia, 1909-10, repairs to buildings, fire protection, etc.*

	Labor.	Material.	Contract.	Total.
Fireproof stairways erected in Ambush, Amidon, Banneker, Blair, Blake, Carbery, Garrison, Giddings, Jackson, Logan, Madison, Magruder, Monroe, Phelps, Phillips, Towers, Van Buren, and Wormley schools.....				\$56,319.65
Change exits so as to provide a door opposite each stairway on both sides of the building at Arthur, Briggs, Fillmore, Garrison, Giddings, Lenox, Madison, and Wilson schools.....	\$564.81	\$652.99		1,217.80
Put wire guards on stairways at H. D. Cooke School.....			\$68.60	68.60
Provide drop ladder at Curtis School.....			27.70	27.70
For Franklin School:				
85 metal lockers.....			446.25	446.25
Extension of ladder.....			3.00	3.00
Total Franklin School.....			449.25	449.25
Tinning at Montgomery School.....	6.88	7.27		14.15
For Webster School:				
Carpentering.....	7.00	4.99		11.99
Painting.....	1.31			1.31
Total Webster School.....	8.31	4.99		13.30

## SUMMARY.

Amount accounted for.....	\$58,110.45
Adding machine.....	135.00
Blueprints.....	2.50
Material on hand.....	1,749.44
Unexpended.....	2.61
	60,000.00

*Repairs and improvements to engine houses, 1910.*

[Appropriation, \$10,000.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 1 engine house.</i>				
Carpentering.....	\$33.69	\$57.62		\$91.31
Painting.....	1.00	.44		1.44
Plumbing.....	2.25	5.55		7.80
Material drawn by captain.....		1.86		1.86
Total.....	36.94	65.47		102.41
<i>No. 2 engine house.</i>				
Carpentering.....	30.06	48.27		78.33
Tinning.....	6.88	18.61		25.49
Plumbing.....	5.50	1.14		6.64
Material drawn by captain.....		1.41		1.41
Total.....	42.44	69.43		111.87
<i>No. 4 engine house.</i>				
Carpentering.....	110.54	165.27		275.81
Painting.....	20.10	4.36		24.46
Tinning.....	21.82	6.27		28.09
Plumbing.....	27.57	7.66		35.23
New trip in stall.....	10.50	9.05		19.55
Material drawn by captain.....		42.60		42.60
Total.....	190.53	235.21		425.74
<i>No. 5 engine house.</i>				
Carpentering.....	45.69	32.06		77.75
Painting.....	206.58	61.21		267.79
Tinning.....	13.32	.55		13.87
Plumbing.....	6.63	6.01		12.64
Material drawn by captain.....		.37		.37
Total.....	272.22	100.20		372.42



*Repairs and improvements to engine houses, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 6 engine house.</i>				
Carpentering.....	\$6.50	\$6.73	.....	\$13.23
Painting.....	147.69	59.67	.....	207.36
Plumbing.....	1.50	1.50	.....	3.00
New tracks.....	.....	.....	\$152.00	152.00
Material drawn by captain.....	.....	.75	.....	.75
Total.....	155.69	68.65	152.00	376.34
<i>No. 7 engine house.</i>				
Carpentering.....	131.38	85.79	.....	217.17
Painting.....	7.38	7.02	.....	14.40
Tinning.....	.38	.35	.....	.73
Plumbing.....	9.26	3.77	.....	13.03
Material drawn by captain.....	.....	3.81	.....	3.81
New tracks.....	.....	.....	152.00	152.00
Total.....	148.40	100.74	152.00	401.14
<i>No. 8 engine house.</i>				
Carpentering.....	159.34	175.59	.....	334.93
Painting.....	74.40	59.93	.....	134.33
Tinning.....	4.06	6.62	.....	10.68
Plumbing.....	6.19	6.51	.....	12.70
Heating.....	4.75	.65	.....	5.40
Metal stalls.....	.....	.....	487.00	487.00
Electric wiring.....	66.65	50.25	.....	116.90
Material drawn by captain.....	.....	16.35	.....	16.35
Total.....	315.39	315.90	487.00	1,118.29
<i>No. 9 engine house.</i>				
Carpentering.....	51.85	29.61	.....	81.46
Painting.....	163.25	47.19	.....	210.44
Tinning.....	.38	.....	.....	.38
Plumbing.....	3.44	8.28	.....	11.72
Manure-pit frame.....	.....	.....	38.00	38.00
Material drawn by captain.....	.....	6.21	.....	6.21
Total.....	218.92	91.29	38.00	348.21
<i>No. 10 engine house.</i>				
Carpentering.....	13.69	21.29	.....	34.98
Tinning.....	3.44	1.65	.....	5.09
Plumbing.....	5.25	2.03	.....	7.28
Grading.....	1.13	.....	.....	1.13
Total.....	23.51	24.97	.....	48.48
<i>No. 11 engine house.</i>				
Carpentering.....	37.43	49.54	.....	86.97
Painting.....	2.19	1.69	.....	3.88
Tinning.....	16.50	15.40	.....	31.90
Plumbing.....	9.50	.39	.....	9.89
Material drawn by captain.....	.....	32.09	.....	32.09
Total.....	65.62	99.11	.....	164.73
<i>No. 12 engine house.</i>				
Carpentering.....	35.56	40.34	.....	75.90
Painting.....	3.44	3.41	.....	6.85
Tinning.....	10.94	1.54	.....	12.48
Plumbing.....	7.13	.61	.....	7.74
Material drawn by captain.....	.....	2.72	.....	2.72
Total.....	57.07	48.62	.....	105.69
<i>No. 13 engine house.</i>				
Carpentering.....	15.88	23.37	.....	39.25
Tinning.....	3.19	9.70	.....	12.89
Plumbing.....	8.81	1.49	.....	10.30
Heating.....	2.25	.26	.....	2.51
Material drawn by captain.....	.....	.86	.....	.86
Total.....	30.13	35.68	.....	65.81

*Repairs and improvements to engine houses, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 14 engine house.</i>				
Carpentering.....	\$27.50	\$37.56		\$65.06
Painting.....	8.32	5.18		13.50
Tinning.....	11.19	7.49		18.68
Plumbing.....	5.94	8.21		14.15
Heating.....			\$11.00	11.00
Material drawn by captain.....		18.28		18.28
Total.....	52.95	76.72	11.00	140.67
<i>No. 15 engine house.</i>				
Carpentering.....	41.51	40.14		81.65
Painting.....	1.00	.93		1.93
Tinning.....	10.31	3.50		13.81
Plumbing.....	5.69	3.05		8.74
Material drawn by captain.....		2.00		2.00
Total.....	58.51	49.62		108.13
<i>No. 16 engine house.</i>				
Carpentering.....	557.65	371.27		928.92
Painting.....	116.94	53.53		170.47
Tinning.....	254.02	147.77		401.79
Plumbing.....	79.63	113.04		192.67
Heating.....	3.25	2.98		6.23
New track.....			152.00	152.00
Spiral stairway.....			98.00	98.00
Miscellaneous.....	43.30	17.80		61.10
Material drawn by captain.....		.39		.39
Total.....	1,054.79	706.78	250.00	2,011.57
<i>No. 17 engine house.</i>				
Carpentering.....	52.50	49.57		102.07
Painting.....	3.07	.98		4.05
Tinning.....	7.56	7.90		15.45
Plumbing.....	16.94	7.20		24.14
Total.....	80.07	65.65		145.72
<i>No. 18 engine house.</i>				
Carpentering.....	14.56	20.16		34.72
Painting.....	1.50	1.17		2.67
Tinning.....	43.94	33.74		77.68
Plumbing.....	6.70	3.25		9.95
Heating.....	6.00	2.44		8.44
Material drawn by captain.....		4.25		4.25
Total.....	72.70	65.01		137.71
<i>No. 19 engine house.</i>				
Carpentering.....	12.50	25.92		38.42
Painting.....	75.27	31.23		106.50
Tinning.....	6.88	2.96		9.84
Plumbing.....	5.50	1.09		6.59
Material drawn by captain.....		.93		.93
Total.....	100.15	62.13		162.28
<i>No. 20 engine house.</i>				
Carpentering.....	99.88	23.48		123.36
Tinning.....	1.38	.55		1.93
Plumbing.....	4.13	2.87		7.00
New tracks.....			152.00	152.00
Material drawn by captain.....		37.90		37.90
Total.....	105.39	64.80	152.00	322.19
<i>No. 21 engine house.</i>				
Carpentering.....	11.00	11.53		22.53
Tinning.....	5.75	1.71		7.46
Painting.....	5.00	3.34		8.34
Heating.....	2.00	.32		2.32
Total.....	23.75	16.90		40.65

*Repairs and improvements to engine houses, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 22 engine house.</i>				
Carpentering.....	\$13.13	\$3.07		\$16.20
Plumbing.....	1.13	1.76		2.89
Material drawn by captain.....		5.97		5.97
Total.....	14.26	10.80		25.06
<i>No. 1 truck house.</i>				
Carpentering.....	6.82	19.15		25.97
Tinning.....	11.94	3.01		14.95
Plumbing.....	63.01	34.00		97.01
Material drawn by captain.....		28.55		28.55
Total.....	81.77	84.71		166.48
<i>No. 2 truck house.</i>				
Carpentering.....	122.69	154.54		277.23
Painting.....	170.11	64.45		234.56
Tinning.....	.88	.63		1.51
Plumbing.....	22.88	16.69		39.57
Manhole cover.....		2.25		2.25
Material drawn by captain.....		45.97		45.97
Total.....	316.56	284.53		601.09
<i>No. 3 truck house.</i>				
Carpentering.....	39.56	43.67		83.23
Painting.....	2.38	1.13		3.51
Tinning.....	38.13	19.58		57.71
Plumbing.....	4.13	2.58		6.71
Material drawn by captain.....		.14		.14
Total.....	84.20	67.10		151.30
<i>No. 4 truck house.</i>				
Carpentering.....	90.82	73.65		164.47
Painting.....	105.10	52.65		157.75
Tinning.....	5.50	5.83		11.33
Plumbing.....	27.20	14.20		41.40
Grading.....	1.38			1.38
Material drawn by captain.....		20.38		20.38
Total.....	230.00	166.71		396.71
<i>No. 5 truck house.</i>				
Tinning.....	3.44			3.44
Plumbing.....	13.76	1.65		15.41
Heating.....		11.00		11.00
Total.....	17.20	12.65		29.85
<i>No. 6 truck house.</i>				
Carpentering.....	37.19	22.08		59.27
Painting.....	3.44	2.07		5.51
Tinning.....	36.69	33.72		70.41
Plumbing.....	6.88	13.38		20.26
Total.....	84.20	71.25		155.45
<i>No. 7 truck house.</i>				
Carpentering.....	37.81	21.28		59.09
Painting.....	1.00	.36		1.36
Plumbing.....	5.50	.69		6.19
Heating.....	48.25	34.60		82.85
Material drawn by captain.....		5.04		5.04
Total.....	92.56	61.97		154.53
<i>No. 9 truck house.</i>				
Plumbing.....	.69	.08		.77
<i>No. 10 truck house.</i>				
Tinning.....	3.44	.81		4.25
Heating.....	3.25	.48		3.73
Material drawn by captain.....		8.18		8.18
Total.....	6.69	9.47		16.16

*Repairs and improvements to engine houses, 1910—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 1 chemical house.</i>				
Carpentering.....	\$11.50	\$9.04		\$20.54
Painting.....	.56			.56
Plumbing.....	2.06			2.06
Total.....	14.12	9.04		23.16
<i>No. 3 chemical house.</i>				
Carpentering.....	3.59	3.43		7.02
Painting.....	.75			.75
Material drawn by captain.....		4.03		4.03
Total.....	4.34	7.46		11.80
<i>No. 5 chemical house.</i>				
Carpentering.....	14.13	20.55		34.68
Painting.....	4.00	1.55		5.55
Tinning.....	10.25	5.18		15.43
Plumbing.....	6.19	13.97		20.16
Gasoline engine.....	7.50	1.10		8.60
Heating.....	.25			.25
Installing gasoline engine.....			\$137.50	137.50
Repairs to pump.....			59.40	59.40
Material drawn by captain.....		.91		.91
Total.....	42.32	43.26	196.90	282.48
<i>Fire department stables.</i>				
Plumbing.....		4.41		4.41
Material drawn by captain.....		62.07		62.07
Total.....		66.48		66.48

## SUMMARY.

Total accounted for on written orders.....	\$8,791.37
Miscellaneous time consumed in shop and in houses.....	862.49
Material drawn from shop for use in various houses.....	71.64
Telephone service.....	12.00
Forage.....	43.96
Material on hand.....	206.00
Unexpended.....	12.54
Total.....	10,000.00

*Metropolitan police, District of Columbia, 1910 (repairs to stations).*

[Appropriation, \$5,500.]

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 1 police station.</i>				
Carpentering.....	\$50.53	\$50.46		\$100.99
Painting.....	172.81	57.98		230.79
Tinning.....	.19	.27		.46
Plumbing.....	8.06	1.46		9.52
Material drawn by captain.....		2.93		2.93
Total.....	231.59	113.10		344.69
<i>No. 2 police station.</i>				
Carpentering.....	150.67	80.38		231.05
Painting.....	291.48	98.57		390.05
Tinning.....	23.88	22.73		46.61
Plumbing.....	99.87	204.42		304.29
Heating.....	4.00	11.45		15.45
Total.....	569.90	417.55		987.45

*Metropolitan police, District of Columbia, 1910 (repairs to stations)—Continued.*

Class of work.	Labor.	Material.	Contract.	Total.
<i>No. 3 police station.</i>				
Carpentering.....	\$62.27	\$25.53	.....	\$87.80
Painting.....	86.62	24.06	.....	110.68
Tinning.....	8.31	11.88	.....	20.19
Plumbing.....	15.88	20.34	.....	36.22
Material drawn by captain.....		1.28	.....	1.28
Total.....	173.08	83.09	.....	256.17
<i>No. 4 police station.</i>				
Carpentering.....	53.30	46.41	.....	99.91
Painting.....	75.88	23.02	.....	98.90
Tinning.....	1.00	2.74	.....	3.74
Plumbing.....	9.45	.69	.....	10.14
Material drawn by captain.....		5.55	.....	5.55
Total.....	139.63	78.41	.....	218.24
<i>No. 5 police station.</i>				
Carpentering.....	15.75	20.45	.....	36.20
Plumbing.....	17.37	4.37	.....	21.74
Heating.....	3.75	20.89	.....	24.64
Total.....	36.87	45.71	.....	82.58
<i>No. 6 police station.</i>				
Carpentering.....	130.15	73.50	.....	203.65
Painting.....	356.96	104.78	.....	461.74
Tinning.....	64.94	38.31	.....	103.25
Plumbing.....	13.75	.31	.....	14.06
Heating.....	.25		.....	.25
Grading.....	10.38	2.43	.....	12.81
Total.....	576.43	220.33	.....	795.76
<i>No. 7 police station.</i>				
Carpentering.....	129.38	86.46	.....	215.84
Painting.....	225.14	62.61	.....	287.75
Plumbing.....	56.06	359.66	.....	415.72
Total.....	410.58	508.73	.....	919.31
<i>No. 8 police station.</i>				
Carpentering.....	65.07	11.69	.....	76.76
Painting.....	137.33	42.17	.....	179.50
Tinning.....	56.19	44.31	.....	100.50
Plumbing.....	12.00	1.65	.....	13.65
Heating.....		21.25	.....	21.25
Material drawn by captain.....		3.17	.....	3.17
Total.....	270.59	124.24	.....	394.83
<i>No. 9 police station.</i>				
Carpentering.....	13.37	7.19	.....	20.56
Painting.....	3.00	.43	.....	3.43
Plumbing.....	1.50	.66	.....	2.16
Material drawn by captain.....		1.58	.....	1.58
Total.....	17.87	9.86	.....	27.73
<i>No. 10 police station.</i>				
Carpentering.....	21.44	17.51	.....	38.95
Painting.....	67.00	20.27	.....	87.27
Tinning.....	4.63	.96	.....	5.59
Plumbing.....	7.50	1.41	.....	8.91
Heating.....	5.50	22.04	.....	27.54
Total.....	106.07	62.19	.....	168.26
<i>No. 11 police station.</i>				
Carpentering.....	34.44	13.84	.....	48.28
Painting.....	1.31	1.60	.....	2.91
Tinning.....	1.50	2.29	.....	3.79
Material drawn by captain.....		.45	.....	.45
Total.....	37.25	18.18	.....	55.43

## Metropolitan police, District of Columbia, 1910 (repairs to stations)—Continued.

Class of work.	Labor.	Material.	Contract.	Total.
<i>Substation T.</i>				
Plumbing.....	\$1.38			\$1.38
<i>Harbor precinct.</i>				
Carpentering.....	15.63	\$20.06		35.69
Painting.....	.88	.53		1.41
Tinning.....	2.38	1.09		3.47
Plumbing.....	.69	.21		.90
Total.....	19.58	21.89		41.47

## SUMMARY.

Total accounted for.....	\$4,293.30
Miscellaneous time not accounted for on orders.....	1,089.02
Material drawn for various stations.....	56.33
Telephone service.....	12.00
Forage.....	35.56
Unexpended.....	13.79
Total.....	5,500.00

## Public schools, District of Columbia, 1910 (repairs to plumbing).

[Allotment, \$6,878.53.]

No.	Name of school.	Labor.	Material.	Total.	No.	Name of school.	Labor.	Material.	Total.
27	Abbot.....	\$11.44	\$1.16	\$12.60	120	Dent.....	\$17.69	\$3.36	\$21.05
65	Adams.....	5.50	1.00	6.50	107	Hayes.....	8.19	14.17	92.36
53	Addison.....	12.50	.40	12.90	99	Douglass.....	14.87	9.62	24.49
79	Ambush.....	53.01	34.24	87.25	33	Henry.....	33.08	12.57	45.65
42	Amidon.....	4.26	.77	5.03	85	Eastern High.....	26.45	5.97	32.42
129	Armstrong.....	54.83	19.69	74.52	115	Hilton.....	20.32	1.58	21.90
70	Arthur.....	21.45	7.26	28.71	116	Eckington.....	108.32	29.63	137.95
39	Banneker.....	2.25		2.25	119	Hubbard.....	8.25	1.88	10.13
78	Bell.....				135	Edmonds.....	13.25	2.18	15.43
66	Berret.....	8.44	2.58	11.02	147	Hyde.....	31.20	12.12	43.32
127	Birney.....	3.75	3.46	7.21	133	Emery.....	18.88	7.10	25.98
50	Blair.....	59.94	138.06	198.00	100	Ivy City.....	2.25		2.25
61	Blake.....	7.75	1.71	9.46	92	Fillmore.....	3.38	.31	3.69
145	Blow.....	6.63		6.63	69	Jackson.....	14.00	.67	14.67
109	Bowen A.....	17.75	2.24	19.99	32	Force.....	45.19	5.28	50.47
123	Bowen, S. J.....	78.57	25.26	103.83	23	Jefferson.....	47.75	8.01	55.76
60	Bradley.....	11.19	2.85	14.04	15	Franklin.....	170.15	199.51	369.66
46	Brent.....	9.94	33.10	43.04	141	French, B. B.....	7.81	2.38	10.19
75	Briggs.....	19.50	1.35	20.85	143	Gage.....	17.44	.18	17.62
104	Brightwood.....	59.37	7.63	67.00	36	Gales.....	17.25	38.56	55.81
151	Brightwood Park.....	6.88	.36	7.24	106	Garfield.....	3.50	.67	4.17
103	Brookland.....	7.56		7.56	34	Garnet.....	40.06	6.90	46.96
112	Bruce.....	12.88	12.85	25.73	75	Garrison.....	.56	.60	1.16
155	Bryan.....	8.07	.48	8.55	63	Giddings.....	7.56	2.78	10.34
144	Business High.....	23.64	4.84	28.48	73	Good Hope.....	3.69		3.69
58	Carbery.....	7.34		7.34	41	Grant.....	33.52	6.06	39.58
148	Cardozo.....	3.63		3.63	105	Greenleaf.....	12.72	2.36	15.08
43	Central High.....	107.02	39.66	146.68	84	Harrison.....	7.25	2.77	10.02
113	Chevy Chase.....	49.20	15.00	64.20	107	Hayes.....	8.19	14.17	92.36
111	Congress Heights.....	2.75		2.75	33	Henry.....	33.08	12.57	45.65
143	Gage.....	17.44	.18	17.62	115	Hilton.....	20.32	1.58	21.90
36	Gales.....	17.25	38.56	55.81	119	Hubbard.....	8.25	1.88	10.13
106	Garfield.....	3.50	.67	4.17	147	Hyde.....	31.20	12.12	43.32
34	Garnet.....	40.06	6.90	46.96	100	Ivy City.....	2.25		2.25
30	Cook, J. F.....	15.69	6.68	22.37	69	Jackson.....	14.00	.67	14.67
75	Garrison.....	.56	.60	1.16	23	Jefferson.....	47.75	8.01	55.76
154	Cooke, H. D.....	24.44	.81	25.25	95	Johnson.....	7.25	.61	7.86
63	Giddings.....	7.56	2.78	10.34	77	Jones.....	7.25	6.38	13.63
68	Corcoran.....	7.38	.59	7.97	149	Ketcham.....	9.13	1.33	10.46
73	Good Hope.....	3.69		3.69	108	Langdon (contract).....	8.13	.49	8.68
26	Curtis.....	27.69	3.32	31.01	132	Langston.....	19.32	6.10	25.42
41	Grant.....	33.52	6.06	39.58	67	Lenox.....	5.69	.04	5.73
152	Deanwood.....	7.56	1.50	9.06	18	Lincoln.....	7.56	.63	8.19
105	Greenleaf.....	12.72	2.36	15.08	90	Logan.....	35.69	18.47	54.16
52	Dennison.....	20.81	13.89	34.70	124	Lovejoy.....	5.00		5.00
84	Harrison.....	7.25	2.77	10.02	142	Ludlow.....			

*Public schools, District of Columbia, 1910 (repairs to plumbing)—Continued.*

No.	Name of school.	Labor.	Material.	Total.	No.	Name of school.	Labor.	Material.	Total.
82	M Street High.....	\$42.07	\$16.09	\$58.16	80	Slater.....	\$26.69	\$6.99	\$33.68
71	Madison.....	36.76	4.60	41.36	64	Smallwood.....	8.13	7.85	15.98
55	Maury.....	63.25	36.64	99.89	97	Stevens.....	27.25	19.07	46.32
16	McCormick.....	217.45	169.96	387.41	19	Sumner.....	56.63	22.42	79.05
130	McKinley Manual				126	Syphax.....	7.50	.92	8.42
	Training.....	72.08	15.24	87.32	118	Takoma.....	10.69	5.39	16.08
8	Military Road.....	7.62	.83	8.45	88	Taylor.....	6.38	2.92	9.30
72	Monroe.....	2.00	.56	2.56	102	Tenley.....	5.44	5.45	10.89
140	Montgomery.....	9.06	1.96	11.02	102	Tenley (contract).....			51.10
125	Morgan.....	18.88	2.18	21.06	9	Thomson.....	6.63		6.63
44	Morse.....	12.01	5.87	17.88	14	Threlkeld.....	59.06	19.65	78.71
50	Mott.....	8.38	.47	8.85	59	Towers.....	4.50		4.50
122	Orr.....	4.62		4.62	45	Twining.....	15.51	12.05	27.57
93	Patterson.....	.25		.25	83	Tyler.....	149.48	115.71	265.19
98	Payne.....	.75		.75	87	Van Buren.....	10.13	1.42	11.55
31	Peabody.....	3.00		3.00	150	Van Ness.....	6.32	1.23	7.55
131	Petworth.....	15.63	5.23	20.86	4	Wallach.....	9.70	4.25	13.95
57	Phelps.....	21.63	24.90	46.53	121	Webb.....	23.00	22.36	45.36
81	Phillips.....	5.20	.40	5.60	51	Webster.....	17.37	2.41	19.78
86	Polk.....	2.38	.32	2.70	54	Weightman.....	13.06	2.61	15.67
17	Potomac.....	.56		.56	117	Western High.....	84.63	14.59	99.22
28	Randall.....	33.81	83.05	116.86	136	Wheatley.....	.50	1.39	1.89
110	Reservoir.....	2.66		2.66	89	Wilson.....	2.00	1.58	3.58
146	Ross.....	15.31	2.34	17.65	89	Wilson (contract).....			30.25
22	Seaton.....	23.57	13.31	36.88	49	Wormley.....	8.88	1.78	10.66
134	Simmons.....	20.69	2.02	22.71					

## SUMMARY.

Total accounted for.....	\$4,652.15
Miscellaneous time not accounted for on orders.....	965.01
Harness, horseshoeing, etc.....	85.89
Purchase of forage.....	58.47
Unexpended.....	39.81
Material on hand.....	1,077.20
Total.....	6,878.53

*Streets, District of Columbia, 1910, deep wells.*

[Appropriation, \$5,000.]

Schools.	Labor.	Material.	Contract.	Total.
Bunker Hill road.....			\$266.60	\$266.60
Burville.....			485.00	485.00
Chain Bridge road.....			249.50	249.50
Conduit road.....			211.00	211.00
Congress Heights.....			1,427.50	1,427.50
Garfield.....			637.50	637.50
Smothers, Henry.....			757.50	757.50
Stanton.....			805.00	805.00
Various.....	\$5.25			5.25
Total.....	5.25		4,839.60	4,844.85

## SUMMARY.

Amount accounted for.....	\$4,844.85
Unexpended.....	155.15
Total.....	5,000.00

*Courts, District of Columbia, 1910, police court, repairs to buildings.*

[Appropriation, \$400.]

Class of work.	Labor.	Material.	Contract.	Total.
Carpentering.....	\$77.13	\$29.34	.....	\$106.47
Painting.....	27.38	12.15	.....	39.53
Steam fitting.....	1.00	1.00	\$132.98	134.98
Plumbing.....	6.19	1.08	.....	7.27
Material drawn by engineer.....	.....	4.95	.....	4.95
Removing old and furnishing and installing a new prisoners' cage.....	.....	.....	100.00	100.00
Total.....	111.70	48.52	232.98	393.20

## SUMMARY.

Accounted for.....	\$393.20
Miscellaneous time not accounted for on orders.....	6.00
Unexpended.....	.80
Total.....	400.00

*Report of inspections of steam boilers, public schools, 1909-10.*

School.	Boilers.	High pressure.	Low pressure.	Length.	Diameter.	Tubes.	Size of tubes.	Manholes.	Size of man-holes.	Tested.	Safety blows.	Date of inspection.	Remarks.
Armstrong Manual Training.	2	2	...	15½	...	46	In. 3½	1	Inches. 11 by 15	170	110	July 13, 1909	
Business High.	3	1	...	16	66	66	3	2	12 by 16	160	85	July 8, 1909	All defective tubes; replaced.
		2	...	16	66	66	3	2	12 by 16	160	85	.....do.....	Do.
		3	...	16	65	66	3	2	12 by 16	160	85	.....do.....	Do.
Brookland.....	2	1	...	12	42	52	3	1	11 by 15	100	50	Aug. 24, 1909	Good condition.
Brightwood.....	1	1	...	12	42	38	3	1	11 by 15	70	30	.....do.....	Do.
		1	...	12	42	43	3	1	11 by 15	60	25	Oct. 2, 1909	New dead plate for fire box; 1 boiler retubed.
S. J. Bowen.....	1	1	...	14	54	64	3	1	11 by 15	100	50	July 21, 1909	Retubed.
		...	3	12	52	64	3	1	11 by 15	100	25	Dec. 1, 1909	Nos. 1 and 3 retubed; No. 2 condemned and replaced.
Central High.....	4												Good condition.
Cranch.....	2	2	...	10	42	38	3	1	11 by 15	60	40	Sept. 16, 1909	Replaced 8 condemned tubes.
Curtis.....	2	2	...	12	54	65	3	2	11 by 15	60	25	Sept. 20, 1909	Boilers retubed.
Dennison.....	2	2	...	10	42	49	3	2	11 by 15	110	25	Nov. 30, 1909	New boilers; old ones condemned.
Eastern High.....	2	2	...	12	46	52	3	1	11 by 15	65	30	Aug. 31, 1909	Two new tubes and stem for handhole plate.
Emery.....	2	2	...	14	54	54	3	1	11 by 15	65	35	Dec. 30, 1909	Both boilers retubed.
Force.....	2	2	...	12	42	46	3	1	11 by 15	70	30	Sept. 17, 1909	Boiler burned; retubing necessary.
Franklin.....	2	2	...	12	48	48	3	1	11 by 15	60	30	.....do.....	Good condition.
Gales.....	2	2	...	10	42	49	3	1	11 by 15	65	30	Aug. 26, 1909	New stem for handhole plate.
Garnet.....	2	2	...	12	42	46	3	1	11 by 15	60	30	Sept. 21, 1909	Good condition.
Grant.....	2	2	...	10	42	42	3	1	11 by 15	65	30	Sept. 18, 1909	Do.
Henry.....	2	2	...	12	46	42	3	1	11 by 15	70	25	Sept. 21, 1909	Do.
Lincoln.....	2	2	...	10	42	38	3	1	11 by 15	60	30	Sept. 16, 1909	Do.
M Street High.	2	2	...	12	54	36	4	2	11 by 15	60	40	Oct. 15, 1909	Do.
										165	110	July 10, 1909	Do.
McKinley Manual Training.	4	4	...							170	110	.....do.....	Do.
										180	115	.....do.....	Do.
										185	115	.....do.....	Do.

a 25 horsepower upright.



*Report of inspections of steam boilers, public schools, 1909-10—Continued.*

School.	Boilers.	High pressure.	Low pressure.	Length.	Diameter.	Tubes.	Size of tubes.	Manholes.	Size of man-holes.	Tasted.	Safety blows.	Date of inspection.	Remarks.
				<i>Ft.</i>	<i>In.</i>		<i>In.</i>		<i>Inches.</i>				
Peabody.....	2	...	2	14	54	54	3	1	11 by 15	60	35	Aug. 30, 1909	All new tubes.
Stevens.....	2	...	2	12	42	46	3	1	11 by 15	65	30	Sept. 18, 1909	Good condition.
Seaton.....	2	...	2	10	42	40	3	2	11 by 15	70	30	Sept. 23, 1909	New stem in hand-hole plate.
Sumner.....	2	...	2	12	48	54	3	1	11 by 15	65	30	Sept. 17, 1909	Good condition.
Syphax.....	1	1	...	14	54	52	3	1	11 by 15	100	50	July 22, 1909	Do.
Tennallytown..	1	...	1	10	45	46	3	1	11 by 15	70	30	Sept. 23, 1909	Do.
Wallach.....	2	...	2	12	46	52	3	1	11 by 15	40	30	Sept. 3, 1909	Do.
Webster.....	2	...	2	14	54	54	3	1	11 by 15	60	25	Aug. 2, 1909	Defective tubes replaced in south boiler; north boiler retubed.
Western High..	2	2	...	16	60	82	3	2	11 by 15	100	50	July 25, 1909	Defective tubes replaced.
Jefferson.....	2	2	...	12	42	46	3	1	11 by 15	65	25	Aug. 26, 1909	Good condition.

HENRY STOREY,

*Superintendent of Repairs, District of Columbia.*

The MUNICIPAL ARCHITECT.

## REPORT OF THE INSPECTOR OF PLUMBING.

WASHINGTON, D. C., *August 15, 1910.*

SIR: I have the honor to submit the twenty-eighth annual report of the work performed by the division of plumbing inspection for the fiscal year ended June 30, 1910, together with certain recommendations for consideration.

My predecessor, Mr. Henry B. Davis, resigned from the service of the District on September 28 last, at which time I was temporarily appointed to the position and confirmed on January 28, 1910. No changes of moment have been made in the policy of the office, although it is believed that the employment of personal letters and personal dealings, as far as possible, recently inaugurated, between this office and the various real-estate firms, property holders, and plumbers has had the general effect of obtaining a much closer and better compliance with the regulations and good sanitary practice than was obtainable through the mailing of form letters and pre-emptory notices which have been quite generally used in the past.

Several amendments have been made to the regulations, which have a tendency to make the practices of the office more uniform and cause less complaint on the part of the public and the plumbers. The complete new edition of the regulations with amendments to February 1, was printed and distributed, thus doing away with frequent disagreements over previous amendments which were not covered in the last edition and which the holders thereof had not had the opportunity to insert.

The table appended is a graphic representation of the work performed by the outdoor force of the office:

Preliminary examinations.....	8,197
Work in old houses.....	7,559
Work in new houses.....	10,724
Gas fitting.....	3,047
Lead services.....	950
Peppermint tests and final inspections.....	3,687
Terra-cotta sewers:	
New.....	98
Repaired.....	532
Main sewers tapped.....	1,730
Notices served.....	212
Examinations on complaints.....	4,113
Total.....	40,849

To the above total should be added inspections made by my predecessor and myself (400), which were of a supervisory nature; inspections by myself and by inspectors of construction on the installation of plumbing work in school buildings and other District structures (1,782); and by the principal assistant inspector of plumbing (1,912), which consisted of consultations with material men relative to plumbing materials, examining gas heaters, etc., submitted for approval; investigations of illegal plumbing work and visits to the police court and police stations, which do not show directly in the results given under police court cases. The total of these inspections (4,049) should be added to the total given above, which will give a grand total of 44,953 inspections made by the office force, which shows a healthy increase over the last fiscal year.

*Table of inspections of preceding years.*

1894-95.....	5,708	1902-3.....	25,297
1895-96.....	8,677	1903-4.....	25,637
1896-97.....	14,112	1904-5.....	27,337
1897-98.....	17,550	1905-6.....	30,185
1898-99.....	17,600	1906-7.....	32,190
1899-1900.....	17,405	1907-8.....	29,547
1900-1.....	18,965	1908-9.....	39,404
1901-2.....	32,621	1909-10.....	44,953

Attention is invited to the great increase in complaint work over last year, being an increase from 2,657 inspections to 4,113 for the outside force, and from 8,215 to 10,356 communications handled in the office.

The following is a table of the details of office work performed during the past fiscal year and a comparison with the previous year, which shows a marked increase, as indicated by the comparison:

	1910.	1909.
Orders to repair plumbing and gas fitting.....	3,304	1,907
Letters to Engineer Commissioner and other officials.....	980	1,143
Miscellaneous reports and papers.....	3,900	2,304
Indorsements on communications.....	2,172	2,761
Police court cases, fined or nolle prossed.....	15	35
Plans prepared.....	26	34
Specifications prepared.....	30	36
Plans and specifications revised.....	4	12
Examination of plans for new buildings.....	2,421	2,860
Examination of building repair applications.....	4,466	2,225
Two-cent postage stamps used.....	3,558	3,228
One-cent postage stamps used.....	499	192
Post cards used.....	818	.....

On account of the several amendments to regulations which have gone into force during the past year, office work on matters pertaining to the routine inspection work of the office has very materially decreased on account of there being no necessity for handling papers relating to exceptions to the various regulations which were amended. However, there were a greater added number of communications handled in the office due entirely to complaint work than the difference shown between the totals for the two years would indicate, and it is estimated that fully 50 per cent of all the clerical work in this office is now caused solely by the handling of complaints entered in this office or forwarded to this office from the health department and other divisions of the engineer department. This great amount of work, due to complaints, is noteworthy on account of the fact that this office was organized primarily for an inspection bureau, but, on account of the success attained in the police court and other channels in enforcing regulations, the complaint work has increased until it occupies fully 50 per cent of the time of the office and field force.

#### EXTRA TIME.

During the past year a total of one hundred and seventeen days' extra time has been given the District by the various employees of the office without compensation therefor, eighty of the days being the extra time of four men. This is a fair indication of the pressure of work on this office, and it would seem to invite earnest consideration of any measures for the relief of this office.

*Public schools, District of Columbia, 1910 (repairs to plumbing)—Continued.*

No.	Name of school.	Labor.	Material.	Total.	No.	Name of school.	Labor.	Material.	Total.
82	M Street High.....	\$42.07	\$16.09	\$58.16	80	Slater.....	\$26.69	\$6.99	\$33.68
71	Madison.....	36.76	4.60	41.36	64	Smallwood.....	8.13	7.85	15.98
55	Maury.....	63.25	36.64	99.89	97	Stevens.....	27.25	19.07	46.32
16	McCormick.....	217.45	169.96	387.41	19	Sumner.....	56.63	22.42	79.05
130	McKinley Manual Training.....	72.08	15.24	87.32	126	Syphax.....	7.50	.92	8.42
8	Military Road.....	7.62	.83	8.45	118	Takoma.....	10.69	5.39	16.08
72	Monroe.....	2.00	.56	2.56	88	Taylor.....	6.38	2.92	9.30
140	Montgomery.....	9.06	1.96	11.02	102	Tenley.....	5.44	5.45	10.89
125	Morgan.....	18.88	2.18	21.06	9	Tenley (contract).....	6.63	.....	51.10
44	Morse.....	12.01	5.87	17.88	14	Thomson.....	59.06	19.65	78.71
50	Mott.....	8.38	.47	8.85	59	Threlkeld.....	4.50	.....	4.50
122	Orr.....	4.62	.....	4.62	45	Towers.....	15.51	12.05	27.57
93	Patterson.....	.25	.....	.25	83	Twining.....	149.48	115.71	265.19
98	Payne.....	.75	.....	.75	87	Tyler.....	10.13	1.42	11.55
31	Peabody.....	3.00	.....	3.00	150	Van Buren.....	6.32	1.23	7.55
131	Petworth.....	15.63	5.23	20.86	4	Van Ness.....	9.70	4.25	13.95
57	Phelps.....	21.63	24.90	46.53	121	Wallach.....	23.00	22.36	45.36
81	Phillips.....	5.20	.40	5.60	51	Webb.....	17.37	2.41	19.78
86	Polk.....	2.38	.32	2.70	51	Webster.....	13.06	2.61	15.67
17	Potomac.....	.56	.....	.56	54	Weightman.....	84.63	14.59	99.22
28	Randall.....	33.81	\$3.05	116.86	117	Western High.....	.50	1.39	1.89
110	Reservoir.....	2.06	.....	2.06	89	Wheatley.....	2.00	1.58	3.58
146	Ross.....	15.31	2.34	17.65	89	Wilson.....	.....	.....	30.25
22	Seaton.....	23.57	13.31	36.88	49	Wilson (contract).....	8.88	1.78	10.66
134	Simmons.....	20.69	2.02	22.71		Wormley.....	.....	.....	.....

## SUMMARY.

Total accounted for.....	\$4,652.15
Miscellaneous time not accounted for on orders.....	965.01
Harness, horseshoeing, etc.....	85.89
Purchase of forage.....	58.47
Unexpended.....	39.81
Material on hand.....	1,077.20
Total.....	6,878.53

*Streets, District of Columbia, 1910, deep wells.*

[Appropriation, \$5,000.]

Schools.	Labor.	Material.	Contract.	Total.
Bunker Hill road.....	.....	.....	\$266.60	\$266.60
Burville.....	.....	.....	485.00	485.00
Chain Bridge road.....	.....	.....	249.50	249.50
Conduit road.....	.....	.....	211.00	211.00
Congress Heights.....	.....	.....	1,427.50	1,427.50
Garfield.....	.....	.....	637.50	637.50
Smothers, Henry.....	.....	.....	757.50	757.50
Stanton.....	.....	.....	805.00	805.00
Various.....	.....	.....	.....	5.25
	\$5.25	.....	.....	.....
Total.....	5.25	.....	4,839.60	4,844.85

## SUMMARY.

Amount accounted for.....	\$4,844.85
Unexpended.....	155.15
Total.....	5,000.00

*Courts, District of Columbia, 1910, police court, repairs to buildings.*

[Appropriation, \$400.]

Class of work.	Labor.	Material.	Contract.	Total.
Carpentering.....	\$77. 13	\$29. 34	.....	\$106. 47
Painting.....	27. 38	12. 15	.....	39. 53
Steam fitting.....	1. 00	1. 00	\$132. 98	134. 98
Plumbing.....	6. 19	1. 08	.....	7. 27
Material drawn by engineer.....	.....	4. 95	.....	4. 95
Removing old and furnishing and installing a new prisoners' cage.....	.....	.....	100. 00	100. 00
Total.....	111. 70	48. 52	232. 98	393. 20

## SUMMARY.

Accounted for.....	\$393. 20
Miscellaneous time not accounted for on orders.....	6. 00
Unexpended.....	. 80
Total.....	400. 00

*Report of inspections of steam boilers, public schools, 1909-10.*

School.	Boilers.	High pressure.	Low pressure.	Length.	Diameter.	Tubes.	Size of tubes.	Manholes.	Size of man-holes.	Tested.	Safety blows.	Date of inspection.	Remarks.
Armstrong Manual Training.	2	2	...	15½	...	46	3½	1	11 by 15	170	110	July 13, 1909	
Business High.	3	1	...	16	66	66	3	2	12 by 16	160	85	July 8, 1909	All defective tubes; replaced.
	2	2	...	16	66	66	3	2	12 by 16	160	85	.....do.....	Do.
	3	...	...	16	66	66	3	2	12 by 16	160	85	.....do.....	Do.
Brookland.....	2	1	...	12	42	52	3	1	11 by 15	100	50	Aug. 24, 1909	Good condition.
	...	1	...	12	42	38	3	1	11 by 15	70	30	.....do.....	Do.
Brightwood.....	1	1	...	12	42	43	3	1	11 by 15	60	25	Oct. 2, 1909	New dead plate for fire box; 1 boiler retubed.
S. J. Bowen.....	1	1	...	14	54	64	3	1	11 by 15	100	50	July 21, 1909	Retubed.
	...	3	...	12	52	64	3	1	11 by 15	100	25	Dec. 1, 1909	Nos. 1 and 3 retubed; No. 2 condemned and replaced.
Central High.....	4	...	...	...	...	...	...	...	...	...	...	...	Good condition.
Cranch.....	2	2	...	10	42	38	3	1	11 by 15	60	40	Sept. 16, 1909	Replaced 8 condemned tubes.
Curtis.....	2	2	...	12	54	65	3	2	11 by 15	60	25	Sept. 20, 1909	Boilers retubed.
Dennison.....	2	2	...	10	42	49	3	2	11 by 15	110	25	Nov. 30, 1909	New boilers; old ones condemned.
Eastern High..	2	2	...	12	46	52	3	1	11 by 15	65	30	Aug. 31, 1909	Two new tubes and stem for handhole plate.
Emery.....	2	2	...	14	54	54	3	1	11 by 15	65	35	Dec. 30, 1909	Both boilers retubed.
Force.....	2	2	...	12	42	46	3	1	11 by 15	70	30	Sept. 17, 1909	Boiler burned; retubing necessary.
Franklin.....	2	2	...	12	48	48	3	1	11 by 15	60	30	.....do.....	Good condition.
Gates.....	2	2	...	10	42	49	3	1	11 by 15	65	30	Aug. 26, 1909	New stem for handhole plate.
Garnet.....	2	2	...	12	42	46	3	1	11 by 15	60	30	Sept. 21, 1909	Good condition.
Grant.....	2	2	...	10	42	42	3	1	11 by 15	65	30	Sept. 18, 1909	Do.
Henry.....	2	2	...	12	46	42	3	1	11 by 15	70	25	Sept. 21, 1909	Do.
Lincoln.....	2	2	...	10	42	38	3	1	11 by 15	60	30	Sept. 16, 1909	Do.
M Street High.	2	2	...	12	54	36	4	2	11 by 15	60	40	Oct. 15, 1909	Do.
	...	...	...	...	...	...	...	...	...	165	110	July 10, 1909	Do.
McKinley Manual Training.	4	4	...	...	...	...	...	...	...	170	110	.....do.....	Do.
	...	...	...	...	...	...	...	...	...	180	115	.....do.....	Do.
	...	...	...	...	...	...	...	...	...	185	115	.....do.....	Do.

a 25 horsepower upright.

*Report of inspections of steam boilers, public schools, 1909-10—Continued.*

School.	Boilers.	High pressure.	Low pressure.	Length.	Diameter.	Tubes.	Size of tubes.	Manholes.	Size of man-holes.	Tasted.	Safety blows.	Date of inspection.	Remarks.
				<i>Ft.</i>	<i>In.</i>		<i>In.</i>		<i>Inches.</i>				
Peabody.....	2	2	2	14	54	54	3	1	11 by 15	60	35	Aug. 30, 1909	All new tubes.
Stevens.....	2	2	2	12	42	46	3	1	11 by 15	65	30	Sept. 18, 1909	Good condition.
Seaton.....	2	2	2	10	42	40	3	2	11 by 15	70	30	Sept. 23, 1909	New stem in hand-hole plate.
Sumner.....	2	2	2	12	48	54	3	1	11 by 15	65	30	Sept. 17, 1909	Good condition.
Syphax.....	1	1	1	14	54	52	3	1	11 by 15	100	50	July 22, 1909	Do.
Tennallytown.....	1	1	1	10	45	46	3	1	11 by 15	70	30	Sept. 23, 1909	Do.
Wallach.....	2	2	2	12	46	52	3	1	11 by 15	40	30	Sept. 3, 1909	Do.
Webster.....	2	2	2	14	54	54	3	1	11 by 15	60	25	Aug. 2, 1909	Defective tubes replaced in south boiler; north boiler retubed.
Western High..	2	2	2	16	60	82	3	2	11 by 15	100	50	July 25, 1909	Defective tubes replaced.
Jefferson.....	2	2	2	12	42	46	3	1	11 by 15	65	25	Aug. 26, 1909	Good condition.

HENRY STOREY,

*Superintendent of Repairs, District of Columbia.*

The MUNICIPAL ARCHITECT.

## REPORT OF THE INSPECTOR OF PLUMBING.

WASHINGTON, D. C., August 15, 1910.

SIR: I have the honor to submit the twenty-eighth annual report of the work performed by the division of plumbing inspection for the fiscal year ended June 30, 1910, together with certain recommendations for consideration.

My predecessor, Mr. Henry B. Davis, resigned from the service of the District on September 28 last, at which time I was temporarily appointed to the position and confirmed on January 28, 1910. No changes of moment have been made in the policy of the office, although it is believed that the employment of personal letters and personal dealings, as far as possible, recently inaugurated, between this office and the various real-estate firms, property holders, and plumbers has had the general effect of obtaining a much closer and better compliance with the regulations and good sanitary practice than was obtainable through the mailing of form letters and pre-emptory notices which have been quite generally used in the past.

Several amendments have been made to the regulations, which have a tendency to make the practices of the office more uniform and cause less complaint on the part of the public and the plumbers. The complete new edition of the regulations with amendments to February 1, was printed and distributed, thus doing away with frequent disagreements over previous amendments which were not covered in the last edition and which the holders thereof had not had the opportunity to insert.

The table appended is a graphic representation of the work performed by the out-door force of the office:

Preliminary examinations.....	8, 197
Work in old houses.....	7, 559
Work in new houses.....	10, 724
Gas fitting.....	3, 047
Lead services.....	950
Peppermint tests and final inspections.....	3, 687
Terra-cotta sewers:	
New.....	98
Repaired.....	532
Main sewers tapped.....	1, 730
Notices served.....	212
Examinations on complaints.....	4, 113
Total.....	40, 849

To the above total should be added inspections made by my predecessor and myself (400), which were of a supervisory nature; inspections by myself and by inspectors of construction on the installation of plumbing work in school buildings and other District structures (1,782); and by the principal assistant inspector of plumbing (1,912), which consisted of consultations with material men relative to plumbing materials, examining gas heaters, etc., submitted for approval; investigations of illegal plumbing work and visits to the police court and police stations, which do not show directly in the results given under police court cases. The total of these inspections (4,049) should be added to the total given above, which will give a grand total of 44,953 inspections made by the office force, which shows a healthy increase over the last fiscal year.

*Table of inspections of preceding years.*

1894-95.....	5,708	1902-3.....	25,297
1895-96.....	8,677	1903-4.....	25,637
1896-97.....	14,112	1904-5.....	27,337
1897-98.....	17,550	1905-6.....	30,185
1898-99.....	17,600	1906-7.....	32,190
1899-1900.....	17,405	1907-8.....	29,547
1900-1.....	18,965	1908-9.....	39,404
1901-2.....	32,621	1909-10.....	44,953

Attention is invited to the great increase in complaint work over last year, being an increase from 2,657 inspections to 4,113 for the outside force, and from 8,215 to 10,356 communications handled in the office.

The following is a table of the details of office work performed during the past fiscal year and a comparison with the previous year, which shows a marked increase, as indicated by the comparison:

	1910.	1909.
Orders to repair plumbing and gas fitting.....	3,304	1,907
Letters to Engineer Commissioner and other officials.....	980	1,143
Miscellaneous reports and papers.....	3,900	2,304
Indorsements on communications.....	2,172	2,761
Police court cases, fined or nolle prossed.....	15	35
Plans prepared.....	26	34
Specifications prepared.....	30	36
Plans and specifications revised.....	4	12
Examination of plans for new buildings.....	2,421	2,860
Examination of building repair applications.....	4,466	2,225
Two-cent postage stamps used.....	3,558	3,228
One-cent postage stamps used.....	499	192
Post cards used.....	818	.....

On account of the several amendments to regulations which have gone into force during the past year, office work on matters pertaining to the routine inspection work of the office has very materially decreased on account of there being no necessity for handling papers relating to exceptions to the various regulations which were amended. However, there were a greater added number of communications handled in the office due entirely to complaint work than the difference shown between the totals for the two years would indicate, and it is estimated that fully 50 per cent of all the clerical work in this office is now caused solely by the handling of complaints entered in this office or forwarded to this office from the health department and other divisions of the engineer department. This great amount of work, due to complaints, is noteworthy on account of the fact that this office was organized primarily for an inspection bureau, but, on account of the success attained in the police court and other channels in enforcing regulations, the complaint work has increased until it occupies fully 50 per cent of the time of the office and field force.

#### EXTRA TIME.

During the past year a total of one hundred and seventeen days' extra time has been given the District by the various employees of the office without compensation therefor, eighty of the days being the extra time of four men. This is a fair indication of the pressure of work on this office, and it would seem to invite earnest consideration of any measures for the relief of this office.

The following table shows the temporary or per diem employees of this office during the past year, the number of days employed, the rates, totals, and appropriation:

Name.	Designation.	Time employed.	Pay per diem.	Total.
		<i>Days.</i>		
J. W. Swainson.....	Inspector.....	40	\$4.00	\$160.00
T. V. Noonan.....	do.....	14½	4.00	58.00
E. Green.....	Laborer.....	101	1.50	151.50
W. Rinehardt.....	do.....	122	1.50	183.00
Milton Lewis.....	do.....	57	1.50	85.50
W. Anderson.....	do.....	9¾	2.25	21.94
W. B. Wall.....	do.....	13	2.50	32.50
F. B. Ridenour.....	do.....	272	2.25	612.00
Total.....		629½		<sup>a</sup> 1,304.44
F. B. Ridenour.....	Laborer.....	26	2.25	<sup>b</sup> 58.50

<sup>a</sup> Chargeable to "Public schools, District of Columbia, 1910, repairs to plumbing."

<sup>b</sup> Chargeable to "Health department, District of Columbia, 1910, drainage of lots."

#### REGULATIONS.

On account of the new law in force regulating the printing and sale of municipal regulations by the commissioners, there is no provision for any appropriation covering the printing of new copies or amendments for distribution, it being set forth in the said law that the receipts shall be deposited in the Treasury as "Miscellaneous Receipts." This makes it necessary in every case to deplete the contingent fund or other available appropriation and trust to getting an item through Congress for the repayment thereof. It is most respectfully recommended that the law be so changed that the amounts received from the sale of regulations shall be deposited in a fund which may be permanently available for the printing and distribution of new copies and amendments of all municipal regulations.

#### POLICE COURT CASES.

Total number of warrants obtained, 15, as follows:

Violation of the plumbing regulations.....	7
Unlicensed plumbers.....	5
Violation of the police regulations.....	1
Disorderly conduct, convenience station.....	1
Excavation without permit.....	1
Total.....	15

Disposition of the above cases:

Nolle pressed because of the performance of work ordered by Commissioners.....	7
Forfeited collaterals (\$20).....	4
Fined (\$26).....	3
Excavation without permit, case nolle pressed (permit obtained later).....	1
Total.....	15

#### COMPULSORY DRAINAGE.

There were 30 cases of compulsory drainage on hand at the beginning of the fiscal year, 9 cases received back from the board of condemnation of insanitary buildings and other officials for action by this office, and 36 new cases received, making a total of 75 cases which were disposed of as follows:

Cases returned to health office.....	2
Cases referred to condemnation board.....	9
Old cases pending.....	8
Cases received too late for action during fiscal year.....	11
Buildings torn down.....	1
Work done by owner.....	27
Work done by District of Columbia.....	17
Total.....	75

The 17 cases where the work was done by the District of Columbia consisted of house sewer and water connections, the installation of plumbing and the compulsory repair or replacement of insanitary plumbing work at a total cost of approximately \$1,500. Eight old cases pending are so constituted that it is extremely doubtful as to whether any action can be taken on them by the District.

The large number of cases where the work was done by the owner after the service of notice by this office is an indication of the painstaking care with which these cases were handled by the office, many personal visits being made to agents, attorneys, and owners.

#### PLUMBING IN PUBLIC SCHOOL BUILDINGS.

The appropriation of \$50,000 for repairs to and changes in plumbing in public school buildings for 1910 has been expended as follows:

The following schools were generally remodeled:

Reservoir .....	\$2, 769. 62
Wallach .....	4, 672. 23
Buchanan .....	3, 113. 45
Greenleaf .....	3, 405. 25
Hayes .....	2, 942. 20
Bell .....	4, 090. 55
Payne .....	3, 363. 84
Douglas .....	3, 342. 05
Chevy Chase .....	3, 640. 36
Langdon .....	3, 452. 66
Bruce .....	2, 767. 66
Toner .....	2, 429. 36

Minor work at the following buildings:

Congress Heights .....	15. 62
Tyler .....	262. 79
Franklin .....	450. 00
Armstrong .....	995. 00

Drinking fountains in various schools .....	536. 00
Drafting materials, blueprints, printing, etc .....	75. 93
Expenses inspection, drafting, etc .....	1, 252. 73
Superintendent of repairs .....	6, 000. 00
Unexpended balance .....	422. 70

50, 000. 00

#### LAUNDRY.

The present method of contracting the laundry work for the towels used in the public convenience stations is very unsatisfactory as well as expensive. We have trouble with unclean towels returned to us, lost towels, and towels badly mangled in the machinery of the laundry companies. Experience leads to the belief that other offices have similar troubles with their laundry work, and I would most respectfully suggest that it be ascertained if it would be not only possible, but profitable, for the District to have all its laundry work done by the workhouse or other similar institution, and a proper vehicle provided for the collection and delivery of the laundered articles.

#### PUBLIC-CONVENIENCE STATIONS.

The two public convenience stations in operation have been in service three years and their use by the public indicates that they are a necessary item of municipal equipment. There is urgent need of several more stations. The one at Ninth and K streets is practically complete and will probably be opened in sixty days. Stations should be placed within the next year or two at Ninth and F streets, at Fifteenth street and New York avenue, at Thirty-second and M streets, and on Pennsylvania avenue near the Peace Monument. It is regrettable that the funds for the construction of the station at Ninth and F streets were not allowed to remain available, as this is probably the most important point for the opening of a convenience station in the city, and I would respectfully recommend that the matter of permission for the placing of a station there and the matter of a reappropriation of the withdrawn amount be taken up with the Interior Department and with Congress, respectively.

The receipts for the last fiscal year from the pay compartments has advanced from about \$1,200 to about \$1,800, which is an advance of 50 per cent over the receipts of



the last fiscal year and 300 per cent of the receipts of the first fiscal year. These receipts are turned into the Treasury as "Miscellaneous Receipts," and, inasmuch as each fee received necessitates the expenditure from the maintenance fund of 50 per cent of it, this means that nearly \$900 was expended during the past fiscal year for soap and laundry work directly on account of the number of fees received. As long as this unbusinesslike way of handling this particular feature is maintained, it will not be possible for this office to figure a definite maintenance cost, but it must always vary directly as the number of pay patrons varies from time to time. In order to equalize this condition I would most respectfully recommend that a clause be inserted in the next appropriation bill allowing the purchase of soap and towels and the payment of current laundry bills from this fund, the balance to be deposited in the Treasury as at present. It is also respectfully recommended that a clause be inserted in the bill giving the Commissioners authority to add a certain sum, not exceeding \$600 per annum, to the salary of such employee of the engineer department as shall be designated to have active supervision of these stations. The work of supervision is accomplished generally before and after office hours, many inspections being made at or shortly after 6 in the morning or during the hours close to midnight, and it appears to me to be unreasonable to expect a poorly paid District servant to render this service without some compensation therefor. The members of the plumbing board, steam engineers' board, secretary of the automobile board, clerks in the assessor's office, and practically every other employee in the building is allowed by law extra compensation for the time given to the District's service outside of office hours. The amount of time contributed by the employee having charge of these stations is several times the number of hours served by any member of the above-mentioned boards. At the present time I am doing this work myself, and I hesitate to direct my subordinates to undertake a duty so encroaching on their personal time.

The total attendance at convenience station No. 1 was 928,781 for the year and 479,304 at station No. 2, making a total of 1,398,085 for both stations. The attendance by sex was 1,020,464 male and 377,621 female. The greatest number at one station in one day was 6,119.

The receipts from usage of pay-closet compartments and rental of clean towels at convenience station No. 1 was \$1,182.38 for the year and \$584.33 at station No. 2, a total of \$1,766.71. The greatest amount taken in at one station in one day was \$10.80.

The number of patrons of these stations was not as great as reported the preceding year, but the number reported at station No. 1 is greater than last year's record at any station of equal facilities of which this office has record, and is second only to stations in New York and Boston, regardless of size. In receipts both stations' returns are much greater than for any other stations in the country. The receipts at station No. 1 equalled approximately 33 per cent of its expense of maintenance. The best record elsewhere for last year for a station open eighteen hours per day, with paid attendants and furnishing certain free articles to the public, was 11 per cent, or one-third as well as this station.

#### PUBLIC BATHS.

For several years my predecessor has included in the annual report a plea for public baths in the District of Columbia. It is regrettable that the capital city of the country, which should be foremost in all things pertaining to advancement of health and good citizenship, should be almost the only city of any size in the country which is not able to give a free municipal bath to its citizens or visitors. Free baths or public or semipublic baths at nominal prices are furnished all the year round to the adult poor in Chicago, Boston, Baltimore, Brooklyn, New York, Albany, Syracuse, Cleveland, San Francisco, Buffalo, and 27 other cities of lesser size. Some of these cities have been furnishing free baths for fifteen years or more. In some cities the original bath houses were given to the city by philanthropists, and the cities have, in every instance, followed this up by municipal appropriations for the construction of municipal buildings and the extension of the free-bath system.

The construction of municipal bath houses of the shower-bath type should not be confused with the movement for the playground baths, inasmuch as the public bath house is primarily for adults, although children would be welcome. They should be built in the most congested centers, so that they can be most easily accessible to the people whom it is desired to reach, whereas the playgrounds are not generally located at available points for public bath houses. There is at present no place in Washington, outside of the bathing beach (which is only open a short time and is primarily an athletic institution), where one may get a bath free or one at reasonable prices. The

following paragraphs taken from Mr. Davis's last report fully cover the question of the public bath as a municipal desirability:

"It is not for the citizen in whose home there is a bath tub or the member of the exclusive club whom the public bath is intended to reach, but those people who have no home or the dweller of the alley. The former would be glad to have a bath, but can not afford one at a fancy price, and the latter could be taught (in fact, would teach himself) the benefits of frequent bathing if the privilege were only extended to him. It must be remembered, however, that we can not get these persons whom we would try to teach cleanliness to walk great distances for a bath.

"An authority on public baths says: 'To serve those for whose use they are intended they must be located in the crowded districts, within easy walking distance. Where public baths have been longest in use there is not only a marked improvement in the general health, but a resultant increase in mental alertness as well.' Doctor Barrick says: 'I consider that I have done more to prevent the spread of disease in my work for public baths than in all my work as a physician,' and 'money spent on public baths, where people can go and get clean, does more toward raising the standard of health and morality than a much greater amount spent in any other way.' Another authority says: 'You can not be healthy or even good unless you are clean.' The Boston bath commission states, in speaking of a marked improvement in the number of arrests of young persons: 'The work of the bath department has been the greatest single agency in effecting this vital improvement in public morals.'

"It is a known fact that some people are exceedingly careless regarding bathing or keeping themselves clean; this may be due to lack of bathing facilities or gross carelessness. If those persons could secure a public bath within walking distance, as well as a shower bath, with plenty of good hot water and soap, without cost to themselves, the invigoration, freedom from expense, and the proximity of the building would teach them bathing as a habit. The benefits of a public bath house would certainly be felt in the improvement of the slum and alley conditions of the city."

#### PUBLIC-SCHOOL BATHS.

This office has for several years recommended that steps be taken to make the art of swimming a compulsory attainment for the pupils of some definite grade in the public schools. I was pleased some time since to note in the public press that the Girls' High School in Boston had taken this step, which is simply following the custom of the cities of the Old World, where dry-land swimming is taught until the instructor feels that the student is competent to enter the water, and then swimming is taught in some of the magnificent swimming baths of the several municipalities. Ella Flagg Young, superintendent of schools for Chicago, and recently elected president of the National Educational Association, is also reported to be very strongly in favor of teaching the art of self-preservation in the water to the pupils of all the public schools, and I feel that if the matter is considered in a careful manner that no argument is necessary to indicate the absolute desirability of what many persons consider an innovation. I believe that the cost of maintaining the very small staff necessary, together with the equipment, would be less than the "educational value" of the pupils ultimately saved from an untimely death through drowning, or that the yearly expenditure for this purpose (probably not exceeding \$5,000) would be less than the sum the District is compelled to spend from year to year in educating the pupils who afterwards meet death in this manner, thus making the District's investment in their education of no effect.

A start has been made to this end by the Young Men's Christian Association, where the instructors gave free swimming lessons for a time during the summer.

In conclusion, I beg to commend to you the creditable and conscientious work that has been performed during the past year by the inspectors of the field force and the men engaged in the office work, who have not hesitated to work many hours overtime as the public business appeared to demand it.

I also desire to acknowledge and extend my thanks for the hearty cooperation and earnest support extended to this office by the various officials with whom I have had the honor to officially associate.

Respectfully submitted.

A. R. MCGONEGAL,  
*Inspector of Plumbing, District of Columbia.*

Capt. E. M. MARKHAM,  
*Corps of Engineers, U. S. Army,  
Assistant to the Engineer Commissioner, District of Columbia.*

## REPORT OF THE PLUMBING BOARD.

WASHINGTON, D. C., *August 15, 1910.*

SIR: I have the honor to submit the following report of the work of the plumbing board for the past fiscal year:

There were held during the year 25 meetings for the examination of candidates for licensing as master plumbers and gas fitters. The total number of examinations held during the year is 43. The number of original candidates examined for licensing as master plumbers and gas fitters is 19, of whom 5 passed and 14 failed. Of those who had previously been examined for licenses as master plumbers and gas fitters, 5 passed and 16 failed in their examinations. Two candidates passed the examination for licensing as master gas fitters on their first appearance before the board and one passed at his second examination.

There were no changes in the personnel of the board during the year. Messrs. Peter C. Schaefer and Patrick J. Brick were reappointed as members of the board for a period of two years, the same to take effect July 1, 1909.

Very respectfully,

PETER C. SCHAEFER,  
*President.*  
RICHARD A. O'BRIEN,  
*Secretary.*

Capt. E. M. MARKHAM,  
*Corps of Engineers U. S. Army,*  
*Assistant to the Engineer Commissioner, District of Columbia.*

## REPORT OF THE INSPECTOR OF GAS AND METERS.

WASHINGTON, D. C., *September 21, 1910.*

GENTLEMEN: I have the honor to transmit herewith a report of the work of this office during the fiscal year ended June 30, 1910.

The law directs that the illuminating power of the gas furnished by any gas-light company, person, or persons in the District of Columbia shall be equal to 22 candles by the Bunsen photometer, using the Bray slit union burner No. 7, consuming 5 cubic feet of gas per hour, and such gas shall not contain more than 20 grains of sulphur in any form in 100 cubic feet, nor more than 5 grains of ammonia in any form in 100 cubic feet, and shall be free of the impurity known as hydrogen sulphide. The law further directs that this office shall make daily inspections of the gas supplied by each company.

To carry out the legal requirements, this office maintains one testing station at 1226 Wisconsin avenue, in the territory of the Georgetown Gas Light Company, and three testing stations in the territory of the Washington Gas Light Company, as follows: The central testing station and office headquarters, at the corner of Tenth and D streets NW.; the northwest station, at 1335 Fourteenth street NW.; and the southeast station, at the corner of Fifth and D streets SE.

The gas supplied by the Georgetown Gas Light Company is a coal gas enriched with oil gas, while that supplied by the Washington Gas Light Company is a mixture of coal gas and carburetted water gas.

## WASHINGTON GAS LIGHT COMPANY.

## ILLUMINATING POWER.

Seven hundred and ninety-four official photometric determinations of the gas supplied by the Washington Gas Light Company gave a mean of 23.01 candles, with a maximum of 28.93 candles, at the southeast testing station on June 11, 1910, and a minimum of 18.63 candles at the same station on June 7, 1910.

The mean of 300 photometric tests at the central testing station was 22.38 candles, the maximum 25.09 candles on July 31, 1909, and the minimum 19.53 candles on March 15, 1910. Two hundred and sixty-three tests at the southeast station gave a mean of 23.20 candles. The maximum and minimum results obtained at this station are given in the preceding paragraph. Two hundred and thirty-one determinations at the northwest testing station gave a mean of 23.61 candles, with a maximum of 27.29 candles on November 8, 1909, and a minimum of 20.93 candles on March 9, 1910.

On forty-four days the illuminating power of the gas was below the legal requirement of 22 candles at some one station, on thirteen days it was below at two stations, and one day it was below at all three stations.

On most of these days the lowest result obtained was between 21 and 22 candles.

## PURITY.

*Ammonia.*—The mean amount of ammonia found in the gas at the central station was 0.05 grain in 100 cubic feet, with a maximum of 0.41 grain, on June 22, 1910. On one hundred and eighty-six days the tests failed to show any ammonia present in the gas at this station. The mean amount of ammonia found at the southeast testing station was 0.44 grain in 100 cubic feet of gas, with a maximum of 1.82 grains on June 21, 1910. On twenty-two days the tests showed no ammonia present in the gas at this station.

*Sulphur.*—At the central testing station the mean amount of sulphur found was 8.33 grains in 100 cubic feet of gas, with a maximum of 11.05 grains on December 11, 1909, and a minimum of 4.80 grains May 9, 1910. The mean amount found at the southeast testing station was 6.49 grains, with a maximum of 10.69 grains on November 20, 1909, and a minimum of 2.76 grains on September 15, 1909.

At no time during the year did the tests show the presence of more than the legal amount of either ammonia or sulphur in the gas supplied by this company.

*Hydrogen sulphide.*—On one day the tests for hydrogen sulphide showed this impurity present in the gas at the three stations, and on four other days this impurity was found to be present in the gas at some one station.

## PRESSURE.

An automatic pressure register at each station gave a continuous record of the gas pressure maintained in the gas mains. This pressure is expressed as height in inches of a column of water which would be supported by the pressure of the gas. The mean and extreme pressures thus recorded are given in the following table:

Station.	Mean.	Maximum.	Minimum.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Central.....	2.44	3.74	1.08
Southeast.....	2.83	4.00	1.14
Northwest.....	2.43	4.20	1.36

The extreme pressures here given do not represent daily variations, but were the results of some unusual conditions and lasted for only a few minutes. The daily variation was usually less than 1 inch.

## SPECIFIC GRAVITY.

Determinations of the specific gravity of the gas compared with air as unity were occasionally made at each station. The means and extremes of the results obtained are as follows:

Station.	Mean.	Maximum.	Minimum.
Central.....	0.633	0.658	0.596
Southeast.....	.655	.684	.623
Northwest.....	.635	.664	.604

## GEORGETOWN GAS LIGHT COMPANY.

## ILLUMINATING POWER.

Three hundred and three official photometric tests were made of the gas supplied by the Georgetown Gas Light Company. The mean of these tests was 22.92 candles, the maximum 27.31 candles on January 3, 1910, and the minimum 17.94 candles on April 8, 1910. On twenty-nine days during the year the tests showed the candle-power to be below the legal requirement of 22 candles, the results running between 21 and 22 candles on most of these days.

## PURITY.

*Ammonia.*—The mean amount of ammonia found in the gas supplied by this company was 4.34 grains in 100 cubic feet, with a maximum of 19.58 grains on March 9, 1910, and a minimum of 0.17 grain on December 14, 1909. The amount of ammonia found in the

gas exceeded the legal limit of 5 grains on fourteen days during the year. Most of these defaults occurred during the month of March, and were caused, so the gas company stated, by the ammonia washer failing, for some unknown reason, to work properly.

*Sulphur.*—The mean amount of sulphur found in the gas was 11.65 grains in 100 cubic feet, with a maximum of 18.85 grains on January 21, 1910, and a minimum of 5.70 grains on April 21, 1910. At no time during the year did the amount of sulphur found in the gas exceed the legal limit of 20 grains in 100 cubic feet.

*Hydrogen sulphide.*—Tests for hydrogen sulphide failed to show the presence of this impurity in the gas at any time during the year.

#### PRESSURE.

The mean pressure in the gas main recorded at the Wisconsin avenue station was 2.08 inches. The maximum was 3.62 inches, and the minimum 0.9 inch. These figures for the extremes were the result of some unusual conditions, the usual daily variation in pressure being less than 1 inch.

#### SPECIFIC GRAVITY.

The mean of several determinations of the specific gravity of the gas was 0.540, compared with air as unity, with a maximum density of 0.564 and a minimum of 0.460.

Monthly data in regard to the candlepower and purity of the gas supplied by the two companies will be found in Tables I to VIII, following this report.

#### METER INSPECTION.

During the past year this office inspected and proved 8,003 gas meters, classified as follows: 3,591 new meters, 743 company complaints, 1,022 consumers' complaints, and 2,647 repaired meters.

Requests for meter inspections were received from 955 consumers supplied by the Washington Gas Light Company. A careful inspection of these meters showed that 333, or 34.87 per cent, were registering fast, average error 5.22 per cent; 63, or 6.60 per cent, were slow, average error 6.10 per cent; 558, or 58.43 per cent, complied with the legal requirements, and 1 failed to register.

Of 743 meters inspected on complaint of the company, 8, or 1.08 per cent, were fast, average error, 5.26 per cent; 382, or 51.41 per cent, were slow, average error 25.75 per cent; 19, or 2.56 per cent, complied with the law; and 334, or 44.95 per cent, failed to register the gas passing through them.

Requests for meter inspections were received from 67 consumers supplied by the Georgetown Gas Light Company. Of this number, 21, or 31.34 per cent, were fast, average error 5.20 per cent; 3, or 4.48 per cent, were slow, average error 4.89 per cent; and 43, or 64.18 per cent, complied with the law.

Monthly summaries of the meter inspections will be found in Tables IX and X.

#### FEES COLLECTED.

The law directs this office to collect a fee of 50 cents for each new or complaint meter inspected, and 20 cents for each repaired meter. During the year just passed the fees thus collected amounted to \$3,192.90, which sum was paid to the collector of taxes, to be deposited in the United States Treasury to the credit of the United States and the District of Columbia, in equal parts, as required by law.

#### DISTRICT GAS BILLS.

In further compliance with C. O. No. 241807, dated September 28, 1903, this office, during the past year, has verified the readings of gas meters in buildings occupied by any branch of the District government, and the accuracy of the resulting gas bills has been certified to by this office.

It is my pleasant duty to testify to the efficient assistance cheerfully rendered at all times by my associates in office.

Respectfully submitted.

ELMER G. RUNYAN,  
*Inspector of Gas and Meters.*

Capt. E. M. MARKHAM,  
*Corps of Engineers, U. S. Army,*  
*Assistant to the Engineer Commissioner, District of Columbia.*

TABLE I.—*Illuminating power and purity of the gas supplied by the Washington Gas Light Company from July 1, 1909, to June 30, 1910, at the central testing station.*

Month.	Observations. <sup>a</sup>	Illuminating power in sperm candles.			Ammonia in 100 cubic feet.			Sulphur in 100 cubic feet.			Days hydrogen sulphide was present.
		Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	
July.....	26	22.76	25.09	22.08	Grains. 0.06	Grains. 0.22	None.	Grains. 9.35	Grains. 10.57	Grains. 8.08	0
August.....	26	23.07	24.23	22.04	.08	.24	None.	8.83	9.72	8.08	0
September.....	25	22.62	24.12	22.00	.06	.27	None.	8.07	8.92	6.15	0
October.....	26	22.32	23.76	20.69	.04	.26	None.	8.51	9.42	7.89	0
November.....	25	22.42	23.92	21.29	.02	.18	None.	9.78	10.79	8.96	0
December.....	26	22.72	24.51	21.51	.01	.05	None.	9.81	11.05	8.62	2
January.....	25	21.81	23.12	20.18	.01	.12	None.	9.50	10.46	8.41	1
February.....	23	22.41	23.71	20.69	.02	.13	None.	8.18	9.07	7.64	0
March.....	27	21.86	23.73	19.53	.03	.26	None.	7.44	8.45	6.77	0
April.....	20	22.00	22.85	20.92	.02	.21	None.	6.83	7.84	5.64	0
May.....	25	22.52	23.65	21.23	.07	.39	None.	6.50	8.52	4.80	0
June.....	26	21.95	23.16	20.62	.12	.41	None.	7.10	8.18	5.53	0
For the year..	300	22.38	25.09	19.53	.05	.41	None.	8.33	11.05	4.80	3

<sup>a</sup> Each observation consists of 10 readings on the Bunsen photometer, at intervals of 1 minute.TABLE II.—*Illuminating power and purity of the gas supplied by the Washington Gas Light Company from July 1, 1909, to June 30, 1910, at the southeast testing station.*

Month.	Observations. <sup>a</sup>	Illuminating power in sperm candles.			Ammonia in 100 cubic feet.			Sulphur in 100 cubic feet.			Days hydrogen sulphide was present.
		Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	
July.....	16	24.54	26.56	22.30	Grains. 0.36	Grains. 0.68	None.	Grains. 5.90	Grains. 6.40	Grains. 5.40	0
August.....	19	23.19	25.41	22.04	.52	1.04	None.	6.31	7.83	4.70	0
September.....	18	22.77	25.18	22.02	.57	1.57	None.	4.74	5.73	2.76	0
October.....	25	22.93	24.67	19.87	.47	.94	None.	6.03	7.54	5.22	0
November.....	24	22.79	24.77	22.03	.13	.52	None.	7.35	10.69	5.74	0
December.....	23	23.06	25.14	20.41	.03	.11	None.	8.21	9.25	7.41	1
January.....	25	23.13	25.12	20.88	.24	.76	None.	6.97	8.61	4.88	0
February.....	17	23.34	25.08	20.48	.58	.58	0.58	8.50	8.50	8.50	2
March.....	26	23.66	26.00	22.20	.53	1.27	.15	7.13	9.51	5.70	0
April.....	26	22.73	25.05	20.28	.52	.96	None.	6.01	10.25	3.83	0
May.....	20	22.63	24.84	20.40	.23	.96	None.	5.57	6.59	3.62	0
June.....	24	23.94	28.93	18.63	.97	1.82	None.	6.80	7.45	5.76	0
For the year..	263	23.20	28.93	18.63	.44	1.82	None.	6.49	10.69	2.76	3

<sup>a</sup> Each observation consists of 10 readings on the Bunsen photometer, at intervals of 1 minute.TABLE III.—*Illuminating power and purity of the gas supplied by the Washington Gas Light Company from July 1, 1909, to June 30, 1910, at the northwest testing station.*

Month.	Observations. <sup>a</sup>	Illuminating power in sperm candles.			Ammonia in 100 cubic feet.			Sulphur in 100 cubic feet.			Days hydrogen sulphide was present.
		Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	
July.....	14	23.43	25.56	22.06	.....	.....	.....	.....	.....	.....	0
August.....	17	23.88	25.99	22.25	.....	.....	.....	.....	.....	.....	0
September.....	16	23.44	25.76	22.16	.....	.....	.....	.....	.....	.....	0
October.....	20	23.41	26.19	22.06	.....	.....	.....	.....	.....	.....	0
November.....	22	24.23	27.29	22.01	.....	.....	.....	.....	.....	.....	1
December.....	18	23.98	25.72	22.08	.....	.....	.....	.....	.....	.....	0
January.....	20	23.16	24.72	22.02	.....	.....	.....	.....	.....	.....	0
February.....	16	23.45	25.10	22.06	.....	.....	.....	.....	.....	.....	0
March.....	22	23.45	25.84	20.93	.....	.....	.....	.....	.....	.....	0
April.....	22	23.36	24.56	22.14	.....	.....	.....	.....	.....	.....	0
May.....	21	23.88	25.47	22.39	.....	.....	.....	.....	.....	.....	0
June.....	23	23.56	24.77	21.95	.....	.....	.....	.....	.....	.....	0
For the year..	231	23.61	27.29	20.93	.....	.....	.....	.....	.....	.....	1

<sup>a</sup> Each observation consists of 10 readings on the Bunsen photometer, at intervals of 1 minute.

TABLE IV.—*Illuminating power and purity of the gas supplied by the Georgetown Gas Light Company from July 1, 1909, to June 30, 1910, at the Georgetown testing station.*

Month.	Observations. <sup>a</sup>	Illuminating power in sperm candles.			Ammonia in 100 cubic feet.			Sulphur in 100 cubic feet.			Days hydrogen sulphide was present.
		Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	
					<i>Grains.</i>	<i>Grains.</i>	<i>Grains.</i>	<i>Grains.</i>	<i>Grains.</i>	<i>Grains.</i>	
July.....	26	22.90	24.95	22.07	5.41	9.04	2.74	8.52	10.04	6.44	0
August.....	26	22.99	27.00	20.76	2.55	4.21	1.86	9.52	11.58	8.58	0
September.....	25	22.98	24.39	22.11	1.52	1.91	.85	8.20	9.44	6.13	0
October.....	26	22.47	23.86	19.59	3.84	4.96	1.96	11.26	16.34	8.29	0
November.....	25	22.76	24.53	20.14	3.29	4.45	2.22	14.48	15.68	13.43	0
December.....	23	21.99	23.36	19.69	1.03	2.06	.17	15.53	18.17	13.35	0
January.....	25	23.33	27.31	19.58	3.21	4.44	2.03	15.88	18.85	13.33	0
February.....	23	23.22	24.67	22.01	4.28	4.28	4.28	14.67	14.67	14.67	0
March.....	27	23.04	26.07	20.35	10.53	19.58	.18	12.09	14.37	6.85	0
April.....	26	22.59	25.48	17.94	7.91	17.41	2.19	11.22	14.98	5.70	0
May.....	25	23.32	24.68	22.26	3.29	4.77	.43	9.87	13.12	6.31	0
June.....	26	23.37	25.04	21.25	2.20	3.14	1.13	11.35	14.23	7.33	0
For the year..	303	22.92	27.31	17.94	4.34	19.58	.17	11.65	18.85	5.70	0

<sup>a</sup> Each observation consists of 10 readings on the Bunsen photometer, at intervals of 1 minute.TABLE V.—*Pressure of the gas supplied by the Washington Gas Light Company, as registered at the central testing station from July 1, 1909, to June 30, 1910.*

Month.	Pressure.		
	Mean.	Maximum.	Minimum.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
July.....	2.34	3.32	1.16
August.....	2.37	3.10	1.72
September.....	2.30	2.98	1.08
October.....	2.39	3.24	1.76
November.....	2.39	3.16	1.76
December.....	2.15	3.60	1.80
January.....	2.42	3.14	1.80
February.....	2.36	3.04	1.76
March.....	2.56	3.60	1.84
April.....	2.59	3.44	1.74
May.....	2.64	3.48	1.92
June.....	2.73	3.74	1.90
For the year.....	2.44	3.74	1.08

TABLE VI.—*Pressure of the gas supplied by the Washington Gas Light Company, as registered at the southeast testing station from July 1, 1909, to June 30, 1910.*

Month.	Pressure.		
	Mean.	Maximum.	Minimum.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
July.....	2.53	3.42	1.20
August.....	2.57	3.34	1.80
September.....	2.52	3.22	1.14
October.....	2.80	3.64	2.00
November.....	2.92	3.46	2.42
December.....	2.99	3.86	2.20
January.....	2.92	3.70	2.28
February.....	3.01	3.86	2.30
March.....	3.10	4.00	1.62
April.....	2.92	3.82	1.66
May.....	2.95	3.84	2.08
June.....	2.72	3.84	1.24
For the year.....	2.83	4.00	1.14

TABLE VII.—*Pressure of the gas supplied by the Washington Gas Light Company, as registered at the northwest testing station from July 1, 1909, to June 30, 1910.*

Month.	Pressure.		
	Mean.	Maximum.	Minimum.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
July.....	2.36	3.30	1.58
August.....	2.29	2.94	1.70
September.....	2.24	2.90	1.50
October.....	2.15	3.14	1.36
November.....	2.22	3.14	1.38
December.....	2.29	3.30	1.46
January.....	2.23	3.14	1.38
February.....	2.24	3.04	1.46
March.....	2.64	3.84	1.54
April.....	2.78	3.90	2.00
May.....	2.79	3.66	2.10
June.....	2.95	4.20	1.76
For the year.....	2.43	4.20	1.36

TABLE VIII.—*Pressure of the gas supplied by the Georgetown Gas Light Company, as registered at the Georgetown testing station from July 1, 1909, to June 30, 1910.*

Month.	Pressure.		
	Mean.	Maximum.	Minimum.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
July.....	2.18	3.56	0.90
August.....	2.12	3.10	1.22
September.....	2.00	2.92	.98
October.....	2.13	3.62	1.18
November.....	2.13	3.18	1.24
December.....	2.11	3.42	1.20
January.....	1.99	3.04	1.20
February.....	1.98	3.16	1.22
March.....	2.09	3.30	1.24
April.....	2.11	3.32	1.36
May.....	2.01	3.40	1.24
June.....	2.07	3.40	1.20
For the year.....	2.08	3.62	.90



TABLE IX.—*Meters inspected and proved for the Washington Gas Light Company and for consumers of gas in Washington, from July 1, 1909, to June 30, 1910.*

Month.	New meters tested for company.						Repaired meters.						Consumers' meters tested on complaint of consumers.						Consumers' meters tested on complaint of company.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Meters tested.			Fast.		Slow.		Correct.	Number.	Fast.		Slow.		Did not register.	Correct.	Number.	Fast.		Slow.		Did not register.	Correct.	Number.	Fast.		Slow.		Did not register.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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July.....	364	.....	.....	.....	.....	.....	106	101	86	18	4.12	8	8.24	60	71	38	20.41	1	3.50	29	27.62	1	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE X.—Meters inspected and proved for the Georgetown Gas Light Company and for consumers of gas in Georgetown, from July 1, 1909, to June 30, 1910.

Month.	Meters tested.	New meters tested for company.						Repaired meters.						Consumers' meters tested on complaint of consumers.					
		Num-ber.	Fast.		Slow.		Did not reg-ister.	Cor-rect.	Num-ber.	Fast.		Slow.		Cor-rect.	Num-ber.	Fast.		Slow.	
			Num-ber.	Per cent.	Num-ber.	Per cent.				Num-ber.	Per cent.	Num-ber.	Per cent.			Num-ber.	Per cent.	Num-ber.	Per cent.
July.....	52	31						31	16					16	5				
August.....																			
September.....	67	50						50	15					15	2				
October.....	45	31						31	8					8	6				
November.....	104	75						75	21	1	8.00			20	8	1	5.00	1	4.33
December.....	55	38						38	38					38	16	7	6.71	1	4.33
January.....	7	3						3							4	3	4.89		
February.....	39	2						2	26					26	11	4	4.50		
March.....	58	27						27	35					35	1	1	5.33		
April.....	55	33						33	18					18	4	2	4.16		
May.....	5														5	1	3.00		
June.....	70	50						50	15					15	5	1	4.00	1	6.00
Average.....	557	298						297	192	1	8.00			191	67	21	5.20	3	4.89
Total.....																			

## REPORT OF THE PERMIT CLERK, ENGINEER DEPARTMENT.

WASHINGTON, D. C., September 13, 1910.

SIR: I have the honor to submit the annual report of the work performed by the permit clerk's office, giving the character and number of permits issued during the fiscal year ending June 30, 1910.

*Permits issued for which fees were paid.*

	1909.						1910.						
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Water connections.....	209	253	239	219	239	162	142	204	316	225	212	273	2,753
Repairs.....	127	112	115	108	117	127	115	101	122	109	89	103	1,343
Sewer connections.....	252	328	212	241	239	174	167	183	325	262	309	255	2,947
Repairs.....	76	81	92	78	77	63	82	68	100	105	96	93	1,011
Gas connections.....	349	434	334	272	318	215	175	304	293	375	319	325	3,713
Repairs.....	18	25	22	21	31	24	16	25	42	22	17	26	289
Carriage blocks and hitching posts.....	1	2	3	1	1				2		5		15
Conduits.....	28	47	25	41	30	35	22	29	39	40	34	59	429
Gas mains.....	11	7	24	6	15	8	14	2	7	15	4	10	123
Guard stones.....				2	1			1	1			1	7
Manholes, connect with sewer, en-													
large, etc.....	36	32	22	61	54	23	22	25	13	11	35	11	345
Parking fences.....	36	30	33	23	30	19	9	13	69	111	64	58	495
Poles.....	33	23	22	34	33	26	20	35	34	44	32	30	366
Total.....	1,236	1,374	1,143	1,107	1,185	876	784	990	1,363	1,320	1,216	1,244	13,838

*Special permits issued without fee.*

	1909.						1910.						
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Water, sewer, gas....	90	98	100	96	124	72	58	71	96	89	81	95	1,070
Blasting.....	6	1	1	4	3	2	1	2	2	2	1	1	26
Bridges across gutter.	3	2		1						3			10
Cables, aerial and overhead connections.....	24	14	15	26	34	22	18	24	15	16	38	27	273
Conduits, P. E. P. (no fee).....	6	3	2	5	5		4						25
Copings.....	53	60	102	159	74	49	23	12	135	223	98	108	1,096
Driveways.....	7	14	8	13	8	5	5	2	6	13	5	4	90
Engines, move.....	1	1	4	3	4	2	6	1	5	7	3	3	40
Leads, lay and repair.....	116	126	185	260	155	87	35	31	190	318	188	208	1,899
Parking, grade.....	78	70	54	118	109	49	57	22	37	44	19	66	723
Parking, pave.....	11	14	10	11	5		1	2	7	15	16	9	106
Parking, railings, renew.....	42	27	25	10	37	14	5	9	36	53	40	34	332
Renewals.....	99	33	139	6	92	90	39	23	40	44	39	53	697
Roadways and alleys, close.....	4	2	3	4	1	1		1		1		1	18
Roadways, grade and repair.....	5	12	11	10	12	4	7	2	15	12	4	5	99
Sidewalks, grade and repair.....	15	6	3	6	8	1	1		9	5		7	61
Sidewalks, haul across.....	8	4	8	2	6	5	4	4	6	16	12	4	79
Sidewalks, lay.....	68	26	46	79	67	6	7	1	43	31	20	25	419
Sidewalks, roadways, and parkings, occupy.....	2	5		3		1	3	2	2	1	1		20
Steps on parking.....	67	63	106	177	78	60	29	21	133	214	88	124	1,160
Stop-cock boxes.....	10			10			10			10			40
Trees.....	2		3	1	1	1	2	1		1	3	2	17
United States Government.....	2	2	1	1				4	2				12
Walls, retaining.....	8	12	11	9	13	6	3	1	5	22	3	7	100
Water tables.....	9	5	20	12	8	1	2	4	7	18	12	17	115
Wires, string.....	62	3	7	63	24	19	69	14	12	62	25	16	376
Steam and Electric Ry. Co.....		4	1		3	9	2	1	2		3	4	29
Miscellaneous.....	7	6	4	8	11	6	6	10	9	6	12	7	92
Total.....	805	613	809	1,097	882	517	397	265	814	1,226	711	828	9,024

During the year just passed there was an increase of 1,774 in number of fee permits, with a corresponding increase of \$1,774 in the amount of money paid for permit fees, and an increase of 1,193 in the number of permits issued without fee, making an increase of 2,967 in number of permits issued during the year.

Permits issued during the fiscal years were as follows:

1908-9.....	19, 895
1909-10.....	22, 862

The following table shows the number of permits issued during the past ten years and the amount paid for permit fees to the collector of taxes, District of Columbia, during that time:

Fiscal year.	Permits issued.	Fees paid.
1900-1901.....	10, 552	\$6, 583
1901-2.....	11, 496	7, 388
1902-3.....	12, 559	7, 930
1903-4.....	12, 565	8, 103
1904-5.....	13, 908	9, 518
1905-6.....	16, 019	10, 496
1906-7.....	15, 820	10, 134
1907-8.....	15, 874	9, 392
1908-9.....	19, 895	12, 064
1909-10.....	22, 862	13, 838

Two thousand and eighty-eight communications, an increase over the previous year of 85, were referred to this office, briefs made on cards, permits issued when necessary, and reports made, papers indorsed, and returned to the respective divisions having supervision over the inspection of the work for which the permits were issued.

A daily report of all permits for excavations in the public space was forwarded to the engineer of highways.

Thirteen thousand eight hundred and thirty-eight index cards were made out, sorted according to streets, and filed.

I take great pleasure in officially acknowledging the faithful, efficient, and valuable services rendered by the assistant permit clerk and the index clerk. During the year they have worked earnestly, and under trying conditions, on account of the variety of permits issued, continuous attention to one thing being impracticable. As shown by the above tables, the work of the office has more than doubled in the past ten years, but notwithstanding the increase of the work the records have been kept up to date, and I wish to extend my thanks for the cordial manner in which they have assisted in all the duties assigned me.

Very respectfully,

Capt. E. M. MARKHAM,  
Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner, District of Columbia.

H. M. WOODWARD,  
Permit Clerk, District of Columbia.

## REPORT OF THE AUTOMOBILE BOARD.

WASHINGTON, D. C., September 17, 1910.

SIR: I have the honor to submit the following report of the automobile board of the District of Columbia for the fiscal year ended June 30, 1910.

There were 24 meetings during the year, at 7 o'clock p. m., the first and third Fridays of each month, for the purpose of examining applicants to operate motor vehicles. There were examined 2,329 applicants to operate motor vehicles; 2,262 were recommended and issued permits, viz, 274 for electric type, 1,686 for gasoline type, 92 for steam type, and 213 for motor cycle type; 67 not being considered competent, were not recommended and were not issued permits; in addition, there were 115 applications filed and temporary permits issued pending examination, none of whom appeared for examination, and 50 filed applications but did not appear for examination. Duplicate permits were issued to 115 operators, they having filed with the secretary of the board affidavits showing their original permits had been lost or destroyed.

The fees received from the enameled metal identification tags for the year amounted to \$4,752, as shown by the receipts of the collector of taxes, District of Columbia, on the

application cards filed in the office of the secretary of the automobile board, the numbers having been assigned to 186 electric, 1,698 gasoline, 62 steam, and 430 motor-cycles types of self-propelled vehicles at \$2 each. There were also issued tags to 11-motor vehicles and 2 motor cycles belonging to the United States and District of Columbia governments for which no fee was paid. There have been 103 duplicate tags procured, at actual cost to owners, from the contractor during the year.

There were registered 234 motor vehicles brought into the District of Columbia by tourists, or other nonresidents for a transient sojourn, who with respect to such vehicles had complied with the law requiring the registration of the motor vehicles in the State or Territory of their residence and where the registration number showing the initial of such State or Territory was displayed on the motor vehicle.

The change in the regulations requiring the payment of \$2 fee for a permit to operate motor vehicles has brought a revenue of \$1,292 from that source, a total revenue from tags and permits of \$6,044 for the year.

The number of persons examined, type of motor to be operated, the number and kinds of motor vehicles to which enameled metal identification tags were assigned and furnished, and all work during the year, is shown in the following table:

Date.	Type of machine.					Not competent.	Examined and recommended each meeting.	Total examined, recommended, and permits issued each month.	Duplicate permits issued.	Temporary permits issued, applicants did not appear for examination.	Applications filed; did not appear for examination.	Communications received.	Machines receiving tags.						United States and District of Columbia governments (no fee).	Amount received each month for identification tags.	Amount received each month for operator's permits.			
	Electric.	Gasoline.	Steam.	Motor cycles.	Electric.								Gasoline.	Steam.	Motor cycles.	Automobiles.	Motor cycles.							
1909.																								
July 2...	7	55	5	15	...		82	158	2	7	...	30	8	108	11	35	3	1	\$324	.....				
July 16...	7	55	6	8	3		76		3	3	3													
Aug. 6...	6	84	8	18	...		116	179	4	8	3	11	9	81	6	30	1	1	252	.....				
Aug. 20...	5	50	2	6	3		63		5	7	...													
Sept. 3...	11	66	4	9	...		90	162	2	4	5	6	18	117	9	29	...	...	346	.....				
Sept. 17...	1	57	7	7	5		72		7	7	...													
Oct. 1...	13	67	5	4	4		89	188	3	3	3	12	16	113	7	30	2	...	332	.....				
Oct. 15...	11	76	3	9	1		99	229	2	4	1	6	14	137	3	18	2	...	144	.....				
Nov. 5...	23	87	7	14	5		131		6	23	9													
Nov. 19...	13	78		7	1		98		4	2	6													
Dec. 3...	12	65	2	10	...		89	179	3	6	...	8	30	121	3	17	...	...	342	.....				
Dec. 17...	27	59	2	2	...		90		7	5	2													
1910.																								
Jan. 7...	14	79	1	6	4		100	170	4	5	1	5	8	88	...	11	...	...	214	.....				
Jan. 21...	9	57	2	2	...		70		2	9	2													
Feb. 4...	14	65	4	7	5		90	149	5	3	...													
Feb. 18...	7	50	...	2	6		59		4	5	1	13	21	105	2	29	1	...	314	.....				
Mar. 4...	12	54	6	15	8		87	199	3	4	2	10	15	229	3	48	1	...	590	.....				
Mar. 18...	5	89	3	15	5		112		8	4	...													
Apr. 1...	9	82	5	13	2		109	230	7	6	6	18	25	228	3	76	1	...	664	\$428				
Apr. 15...	5	99	2	15	...		121		6	...	1													
May 6...	19	142	4	15	5		180	266	24	...	...	24	14	211	8	62	...	...	590	472				
May 20...	4	66	5	11	3		86		9	...	2													
June 3...	8	53	3	9	1		73	147	13	...	...	6	8	160	7	45	1	...	440	392				
June 17...	16	50	4	4	2		74		9	...	4													
Total...	258	1,685	90	223	63		2,256	2,262	135	115	55	149	186	1,698	62	430	11	2	4,752	1,292				

Very respectfully,

H. M. WOODWARD,  
Secretary Automobile Board, District of Columbia.

Approved:

E. F. VERMILLION,  
Chairman Automobile Board, District of Columbia.

Capt. E. M. MARKHAM,  
Corps of Engineers, U. S. Army,  
Assistant to Engineer Commissioner, District of Columbia.

## REPORT OF THE ELECTRICAL ENGINEER.

WASHINGTON, D. C., August 23, 1910.

SIR: I have the honor to submit the following report of the operations of the electrical department for the fiscal year ended June 30, 1910:

By order of the Commissioners of the District of Columbia, dated January 24, 1910, the electrical department was again placed under the jurisdiction of the Engineer Commissioner, after having been transferred from his immediate control on April 17, 1899.

## LAMPS ALONG STEAM RAILROAD TRACKS.

Both the Washington Terminal Company and the Philadelphia, Baltimore and Washington Railroad Company have refused to continue to pay for the lighting of the streets through which their rights of way pass, as required by the acts of Congress approved March 3, 1883, and May 26, 1908, with the result that the money heretofore received from these companies and repaid to the appropriation for street lighting has not been available. The lamps along these rights of way are therefore being maintained at the expense of the District until the suits which have been instituted to recover the cost from these companies are decided.

This action on the part of these railroad companies has tied up \$6,650 yearly in the appropriation for street lighting and \$1,530 in the appropriation for arc lamps.

## STREET LIGHTING.

The following tables show the number of the various street lamps erected, discontinued, etc., during the year:

*Distribution of new lamps established during the fiscal year 1910.*

Kind of light.	North-west.		North-east.		South-west.		South-east.		North-west county.		North-east county.		South-east county.		Total.
	Streets.	Alleys.	Streets.	Alleys.	Streets.	Alleys.	Streets.	Alleys.	Streets, etc.	Alleys.	Streets, etc.	Alleys.	Streets, etc.	Alleys.	
Mantle gas.....	25	38	47	17	65	6	9	8	170	25	48	4	23	.....	<sup>a</sup> 485
Naphtha.....			13								37			.....	50
Electric incandescent:															
25 to 40 candle-power.....	38		34				5		264		113		62	.....	<sup>b</sup> 516
75 to 80 candle-power.....			30				4							.....	34
195 to 200 candle-power.....	2													.....	2
Street designation lamps:															
On fire-alarm posts—															
Gas.....	19		5		3		2		20		1		1	.....	51
Electric incandescent.....	14								5					.....	19
On patrol posts—															
Gas.....	3				1									.....	4
Electric incandescent.....	1								1					.....	2
On plain posts—															
Gas.....	6		6											.....	12
Electric incandescent.....	2													.....	2
Electric arc.....	85		23				2		3					.....	113
Total.....	195	38	158	17	69	6	22	8	463	25	199	4	86	.....	1,290

<sup>a</sup> Of this number 43 lamps in alleys and 213 lamps on streets were changed from naphtha to gas.

<sup>b</sup> Of this number 106 were changed from naphtha.

The changes have been as follows:

Kind of light.	Added.	Discontinued.
Mantle gas.....	485	89
Naphtha.....	50	364
Electric incandescent:		
25 to 40 candlepower.....	516	10
50-candlepower.....		6
75 to 80 candlepower.....	34	
195 to 200 candlepower.....	2	
Electric arc.....	113	47
Street designation lamps:		
On fire-alarm posts—		
Gas.....	51	
Electric incandescent.....	19	
On patrol posts—		
Gas.....	4	
Electric incandescent.....	2	
On plain posts—		
Gas.....	12	13
Electric incandescent.....	2	1
Total.....	1,290	530

Net increase during the year, 760 lamps.

*Lamps of all kinds in service July 1, 1910, as compared with July 1, 1909.*

Kind of light.	1909.	1910.
Flat-flame gas.....	16	16
Mantle gas.....	8,694	9,090
Naphtha.....	1,538	1,224
Electric incandescent:		
25 to 40 candlepower.....	1,685	2,191
50-candlepower.....	6	
75 to 80 candlepower.....	71	105
100-candlepower.....	4	4
195 to 200 candlepower.....		2
4-glower Nernst.....		60
Electric arc.....	60	60
Street designation lamps:	1,403	1,469
Gas.....		
Electric.....	445	499
Gas.....	7	29
Total.....	13,929	14,689

Increase during year, 760 lamps.

#### DISTRICT UNDERGROUND CONDUIT AND CABLE SYSTEM.

The following conduit connections were made to the underground system:

*Fire-alarm posts (total, 35).*

Seventh and B streets NW.  
Ninth and E streets NW.  
Tenth and C streets NW.  
John Marshall place and C street NW.  
Thirteenth and E streets NW.  
Fourteenth and F streets NW.  
Thirteenth and G streets NW.  
Tenth and F streets NW.  
Eleventh street and Pennsylvania avenue NW.  
Twelfth and F streets NW.  
Fifteenth and H streets NW.  
Fifteenth and F streets NW.  
Ninth and G streets NW.

Ninth street and Pennsylvania avenue NW.  
N street between Sixth and Madison streets NW.  
Eleventh street and Maryland avenue SW.  
Twelfth and V streets NW.  
W street between Twelfth and Thirteenth streets NW.  
Four-and-a-half and N streets SW.  
Twelfth and D streets NE.  
North Capitol street and Massachusetts avenue NW.  
First and O streets NW.

Fifth and M streets NW.  
 Massachusetts avenue between Seventeenth and Eighteenth streets NW.  
 Seventeenth and Kilbourne streets NW.  
 Tenth and W streets NW.  
 Thirteenth and B streets SE.  
 Fourteenth street and Spring road NW.<sup>a</sup>  
 Fourteenth and Shepherd streets NW.<sup>a</sup>

Fourteenth and Newton streets NW.<sup>a</sup>  
 Twentieth street and Rhode Island avenue NE.<sup>b</sup>  
 Fourteenth street, Iowa avenue, and Delafield place NW.<sup>a</sup>  
 Thirty-fourth and O streets NW.<sup>a</sup>  
 Sixteenth street and Benning road NE.<sup>a</sup>  
 Twelfth street and Florida avenue NE.<sup>a</sup>

*Patrol posts (total, 18).*

N street between Sixth and Madison streets NW.  
 Eleventh street and Maryland avenue SW.  
 Florida avenue and M street NE.  
 Eighth and D streets NW.  
 Seventeenth and K streets NW.  
 Twelfth and V streets NW.  
 O street between Four-and-a-half and Union streets SW.  
 Third street between F and G streets NE.  
 New Jersey avenue and Q street NW.  
 North Capitol and F streets NW.

Tenth and W streets NW.  
 Water street between M and N streets SW.  
 Fourteenth street and Spring road NW.<sup>a</sup>  
 Fourteenth street, Iowa avenue, and Delafield place NW.<sup>a</sup>  
 Southwest corner of Thirty-fourth and Newark streets NW.<sup>c</sup>  
 Twelfth street and Florida avenue NE.<sup>a</sup>  
 New Hampshire avenue, south of U street NW.<sup>c</sup>  
 Northeast corner of Sixteenth and R streets NW.<sup>c</sup>

*Connections to buildings (total, 11).*

Greenleaf School, Four-and-a-half street between M and N streets SW.  
 Harrison School, Thirteenth street between V and W streets NW.  
 Children's Hospital, Twelfth and W streets NW.  
 Edmonds School, Ninth and D streets NE.  
 Lovejoy School, Twelfth and D streets NE.  
 Force School, Massachusetts avenue between Seventeenth and Eighteenth streets NW.

Wilson School, Seventeenth street between Euclid street and Kalorama road NW.  
 Fire boat (No. 19 Company), Water street between M and N streets SW.  
 Bryant School, Thirteenth and B streets SE.  
 No. 1 police precinct station, Twelfth street between C and D streets NW.<sup>a</sup>  
 New Thompson School, Twelfth street south of L street NW.<sup>a</sup>

*Connections between conduits (total, 6).*

New Jersey avenue and F street NW.  
 Eighteenth and Lamont streets NW.  
 Seventeenth and B streets NW.<sup>c</sup>  
 Eleventh and B streets SE.

Connecticut avenue and Newark street NW.<sup>c</sup>  
 Fourteenth street and Ohio avenue NW.<sup>c</sup>

In making the above-mentioned connections 5,765 feet of conduit (duct feet) and 14 manholes were built, the work being done by this department except where noted otherwise.

*Connections to the underground system.*

	On July 1, 1910.		On July 1, 1910.
Fire-alarm posts.....	297	Miscellaneous District buildings.....	6
Police-patrol posts.....	212	United States Government buildings.....	14
Cable terminal posts.....	7	Private buildings.....	37
Schoolhouses.....	32	Cable poles.....	92
Fire-department houses.....	25		
Police-station houses.....	12	Total.....	734

<sup>a</sup> Built by Chesapeake and Potomac Telephone Company under contract.

<sup>b</sup> Built by the Washington Gas Light Company under contract.

<sup>c</sup> Built by H. M. Schreiner under contract.



*Cable installed during the year.*

Size of cable.	Signal.		Telephone.		Combination.				Total.			
	Cable.	Conductors No. 14, B. & S.	Cable.	Conductors No. 19, B. & S.	Cable.	Conductors No. 14, B. & S.		Conductors No. 19, B. & S.		Cable.	Conductors No. 14, B. & S.	Conductors No. 19, B. & S.
						Pairs.	Con- duct- ors.	Pairs.	Con- duct- ors.			
<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>No.</i>	<i>Feet.</i>	<i>No.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		
100-pair.....			1,338	267,600						1,338		267,600
80-pair.....					230	30	13,800	50	23,000	230	13,800	23,000
65-pair.....					79	15	2,370	50	7,900	79	2,370	7,900
30-pair.....	1,338	80,280			10,110	10	202,200	20	404,400	11,448	282,480	404,400
20-pair.....					544	10	10,880	10	10,880	544	10,880	10,880
15-pair.....					1,327	8	21,232	7	18,578	1,327	21,232	18,578
12-pair.....					6,905	6	82,860	6	82,860	6,905	82,860	82,860
10-pair.....					4,970	5	49,700	5	49,700	4,970	49,700	49,700
8-pair.....					10,367	4	82,936	4	82,936	10,367	82,936	82,936
5-pair.....					1,878	3	11,268	2	7,512	1,878	11,268	7,512
3-pair.....					12,622	2	50,488	1	25,244	12,622	50,488	25,244
Total.....	1,338	80,280	1,338	267,600	49,032	....	527,734	....	713,010	51,708	608,014	980,610

9.79 miles of cable, containing 300.87 miles of conductor.

*Cable withdrawn from service during the year.*

Size of cable.	Signal.		Telephone.		Combination.				Total.			
	Cable.	Conductors No. 14, B. & S.	Cable.	Conductors No. 19, B. & S.	Cable.	Conductors No. 14, B. & S.		Conductors No. 19, B. & S.		Cable.	Conductors No. 14, B. & S.	Conductors No. 19, B. & S.
						Pairs.	Con- duct- ors.	Pairs.	Con- duct- ors.			
<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>No.</i>	<i>Feet.</i>	<i>No.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		
100-pair.....			520	104,000						520		104,000
30-pair.....	520	31,200								520	31,200	
25-pair.....			643	32,150	89	10	1,780	15	2,670	732	1,780	34,820
20-pair.....			80	3,200						80		3,200
12-pair.....	53	1,272			1,911	6	22,932	6	22,932	1,964	24,204	22,932
8-pair.....					4,665	4	37,320	4	37,320	4,665	37,320	37,320
6-pair.....					994	4	7,952	2	3,976	994	7,952	3,976
5-pair.....					2,421	3	14,526	2	9,684	2,421	14,526	9,684
3-pair.....					3,625	2	14,500	1	7,250	3,625	14,500	7,250
Total.....	573	32,472	1,243	139,350	13,705	....	99,010	....	83,832	15,521	131,482	223,182

2.94 miles of cable, containing 67.17 miles of conductor.

Total amount of cable in service June 30, 1910.

Size of cable.	Signal.		Telephone.		Combination.								Total.		
	Cable.	Conductors, No. 14, B. & S.	Cable.	Conductors, No. 19, B. & S.	Cable.	Conductors, No. 14, B. & S.		Conductors, No. 19, B. & S.		Cable.	Conductors, No. 14, B. & S.	Conductors, No. 19, B. & S.			
						Pairs.	Conductors.	Pairs.	Conductors.						
Feet.	Feet.	Feet.	Feet.	Feet.	No.	Feet.	No.	Feet.	Feet.	Feet.	Feet.				
100-pair			10,812	2,162,400					10,812			2,162,400			
90-pair					480	30	28,800	60	57,600	480		57,600			
80-pair					4,503	30	270,180	50	450,300	4,503	270,180	450,300			
75-pair			4,275	541,250					4,275			641,250			
70-pair					1,857	30	111,420	40	148,560	1,857	111,420	148,560			
65-pair					2,785	15	83,550	50	278,500	2,785	83,550	278,500			
60-pair					2,940	30	176,400	30	176,400	2,940	176,400	176,400			
55-pair					4,431	15	132,930	40	354,480	4,431	132,930	354,480			
50-pair	2,833	253,300	4,318	431,800					6,851	253,300		431,800			
45-pair					6,069	20	242,760	25	303,450	6,069	242,760	303,450			
40-pair					19,054	15	571,620	30	1,143,240	19,054	571,620	1,143,240			
35-pair					5,388	15	161,040	25	269,400	5,388	161,040	269,400			
30-pair					22,344	15	670,320	20	893,760	22,344	670,320	893,760			
25-pair					4,633	17	157,522	16	148,256	4,633	157,522	148,256			
20-pair	13,019	781,140	3,036	182,160	574	15	17,220	15	17,220	16,629	798,360	199,380			
15-pair					62,071	10	1,241,420	20	2,482,840	62,071	1,241,420	2,482,840			
10-pair			12,330	616,500	1,043	10	20,860	15	31,290	13,373	20,860	647,790			
5-pair			8,861	354,440	19,026	10	380,520	10	380,520	27,887	380,520	734,960			
3-pair					5,494	8	87,904	10	109,880	5,494	87,904	109,880			
	19,247	577,410	72	2,160	3,020	8	48,320	7	42,280	22,339	625,730	44,440			
					6,424	6	77,088	8	102,784	6,424	77,088	102,784			
	12,240	289,056			32,367	6	388,404	6	388,404	44,607	677,460	388,404			
	570	11,400			25,808	5	258,080	5	258,080	26,378	269,480	258,080			
					97,779	4	782,232	4	782,232	97,779	782,232	782,232			
					5,676	4	45,408	2	22,704	5,676	45,408	22,704			
					32,643	3	195,858	2	130,572	32,643	195,858	130,572			
					94,566	2	378,264	1	189,132	94,566	378,264	189,132			
Total....	47,609	1,912,306	43,704	4,390,710	460,975	....	6,528,720	....	9,161,884	552,288	8,441,026	13,552,594			

104.60 miles of cable containing 4,165.46 miles of conductor.

*Space occupied by District cable installed during the year.*

Owner of space.	Cable.
	Feet.
District of Columbia.....	9,477
Chesapeake and Potomac Telephone Co.....	36,725
Washington Railway and Electric Co. a.....	4,361
Western Union Telegraph Co.....	1,015
Miscellaneous.....	130
Total.....	51,708

a Under this name are included the conduits of all the companies controlled by this corporation.

*Space from which cables were withdrawn from service.*

Owner of space.	Cable.
	Feet.
District of Columbia.....	118
Chesapeake and Potomac Telephone Co.....	13,947
Washington Railway and Electric Co. a.....	1,456
Total.....	15,521

a Under this name are included the conduits of all the companies controlled by this corporation.

*Total space occupied by District cables July 1, 1910.*

Owner of space.	Cable.
	<i>Feet.</i>
District of Columbia.....	112, 112
Chesapeake and Potomac Telephone Co.....	417, 984
Washington Railway and Electric Co. <sup>a</sup> .....	12, 188
United States Government.....	1, 536
Western Union Telegraph Co.....	7, 180
Washington Terminal Co.....	1, 019
Submarine cable.....	150
Miscellaneous.....	179
Total.....	552, 288

<sup>a</sup> Under this name are included the conduits of all the companies controlled by this corporation.

## FIRE-ALARM SYSTEM.

In 1905 a committee of the National Board of Fire Underwriters made certain recommendations for improvements in the fire-alarm system, among which was one "that additional boxes be provided and be so located that no point in the congested value district shall be over 500 feet from some box." An appropriation of \$4,000 was made to provide for these boxes and 15 were erected, the locations of which are the first 15 in the following list.

Forty-one new fire-alarm boxes were placed in service during the year, 28 public and 13 private, located as follows:

*Public boxes.*

- No. 18, John Marshall place and C street NW.
- No. 126, Ninth and E streets NW.
- No. 128, Seventh and B streets NW.
- No. 138, Tenth and F streets NW.
- No. 144, Fifteenth and H streets NW.
- No. 151, Fourteenth and F streets NW.
- No. 161, Fifteenth and F streets NW.
- No. 163, Thirteenth and H streets NW.
- No. 164, Tenth and G streets NW.
- No. 165, Ninth and G streets NW.
- No. 166, Eleventh street and Pennsylvania avenue NW.
- No. 183, Thirteenth and G streets NW.
- No. 185, Twelfth and F streets NW.
- No. 186, Thirteenth and E streets NW.
- No. 191, Ninth street and Pennsylvania avenue NW.
- No. 233, First and Bates streets NW.
- No. 277, First and O streets NW.
- No. 278, Fifth and M streets NW.
- No. 564, First and K streets SE.
- No. 571, Seventeenth and East Capitol streets NE.
- No. 623, North Capitol street and Massachusetts avenue NW.
- No. 835, Eleventh and Girard streets NW.
- No. 837, Fourteenth street and Spring road NW.
- No. 853, Seventeenth and Kilbourne streets NW.
- No. 856, Fourteenth and Newton streets NW.
- No. 857, Holmead place and Oak street NW.
- No. 874, Fourteenth and Shepherd streets NW.
- No. 875, Fourteenth street and Delafield place NW.

*Private boxes.*

- No. 298, Census Annex, No. 458 L street NW.
- No. 299, Washington Railway and Electric Company, Eleventh street and Florida avenue NW.
- No. 499, Washington Railway and Electric Company, Four-and-a-half and O streets SW.
- No. 735, Washington Railway and Electric Company, P street car barns.
- No. 799, Washington Railway and Electric Company, Wisconsin avenue and the District line car barns.
- No. 899, Washington Railway and Electric Company, car barns, Georgia avenue and Peabody street NW.

No. 1214, Casino Theater, No. 630 F street NW.

No. 1232, Union Building, G street between Sixth and Seventh streets NW.

No. 1635, Washington Railway and Electric Company, Fifth and T streets NE., car barns.

No. 1655, Washington Railway and Electric Company, Bennings road between Fifteenth and Sixteenth streets NE, car barns.

No. 1658, Washington Railway and Electric Company, Fifteenth and East Capitol streets car barns.

No. 1659, Washington Railway and Electric Company, Thirteenth and D streets NE, car barns.

No. 1813, Arcade Amusement Company, Fourteenth street and Park road NW.

During the year 25 fire-alarm boxes were changed from overhead to underground connection.

The fire-alarm system was also extended to the new truck house on K street between Third and Four-and-a-half streets SW.

Each fire-alarm box was tested several times during the year, the contact points cleaned and the mechanism thoroughly overhauled. This is done regularly once a month as far as possible. The total number of tests amounted to 4,078, being an average of 8.156 per box.

*Number of fire-alarm boxes in service.*

	July 1, 1909.	July 1, 1910.
Connected by overhead wires:		
Public boxes.....	123	105
Private boxes.....	49	46
Connected by underground wires:		
Public boxes.....	251	297
Private boxes.....	36	52
Total.....	459	500

*Number of alarms received and transmitted.*

Regular box alarms.....	580
Alarms from telephone stations.....	8
Alarms from national automatic boxes.....	0
Local alarms.....	536
Second alarms.....	14
Third alarms.....	4
Fourth alarms.....	0
Fifth alarms.....	0
Sixth alarms.....	0
Seventh alarms.....	0
Special alarms.....	3
Total.....	1,145
False box alarms.....	53
False local alarms.....	9

*Number of alarms received by the month.*

Month	Box.	Box (false).	Local.	Local (false).
1909.				
July.....	40	1	33	1
August.....	44	4	22	0
September.....	45	3	32	0
October.....	53	4	42	0
November.....	61	5	85	0
December.....	80	9	62	2
1910.				
January.....	66	10	35	0
February.....	57	4	51	1
March.....	41	6	61	0
April.....	35	3	70	1
May.....	40	4	21	4
June.....	26	0	22	0
Total.....	588	53	536	9

*Special alarms.*—September 14, 1909, No. 11 engine company to box No. 889; November 3, 1909, No. 6 engine company to box No. 181; May 24, 1909, No. 3 engine company's hose wagon to box No. 629.

## POLICE-PATROL SYSTEM.

The following changes and new installations were made in the patrol system:

## First precinct:

New installation, connected underground—Box No. 44, southwest corner of Eighth and D streets NW. On June 1, 1910, the service in this precinct was changed from a 2-circuit registering and multiple telephone system, 13 boxes on each circuit, to a common battery telephone system, each box being connected direct to the precinct by an independent circuit.

## Second precinct:

Changed from overhead to underground connection—Box No. 16, northeast corner of New Jersey avenue and Q street NW.

New installation, connected underground—Box No. 43, southeast corner of Madison and N streets NW.

## Third precinct:

New installations, connected underground—

Box No. 124, southwest corner of Seventeenth and K streets NW.

Box No. 125, northwest corner of Seventeenth street and New York avenue NW.

## Fourth precinct:

Changed from overhead to underground connection—

Box No. 21, southeast corner of Water and N streets SW.

Box No. 42, northwest corner of Four-and-a-half and O streets SW.

New installation, connected underground—Box No. 53, northeast corner of Eleventh street and Maryland avenue SW.

New installations, connected overhead—

Box No. 121, northeast corner of Four-and-a-half and L streets SW.

Box No. 123, northeast corner of First and L streets SW.

## Sixth precinct:

New installation, connected underground—Box No. 36, southwest corner of North Capitol and F streets.

## Eighth precinct:

Changed from overhead to underground connection—

Box No. 23, northwest corner of Tenth and W streets NW.

Box No. 25, northwest corner of Twelfth and V streets NW.

## Ninth precinct:

Changed from overhead to underground connection—

Box No. 13, moved from Gordon alley between Second and Third, F and G streets NE., to the west side of Third street, between F and G streets NE.

Box No. 23, northwest corner of Twelfth and K streets NE.

New installation, connected underground—Box No. 27, Florida avenue and M street NE.

New installation, connection overhead—Box No. 132, Central avenue and Benning's road NE.

## Tenth precinct:

Changed from overhead to underground connection—

Box No. 25, northeast corner of Georgia avenue and Irving street NW.

Box No. 126, moved from Piney Branch road and Emerson street to the southwest corner of Iowa avenue and Delafield place NW.

New installation, connected underground—Box No. 37, southeast corner of Fourteenth street and Spring road NW.

New installation, connected overhead—Box No. 46, southwest corner of Park road and Warder place NW.

## Eleventh precinct:

New installations, connected overhead—

Box No. 43, Livingston road and District line SE.

Box No. 45, Wheeler road and District line SE.

Box No. 23 was moved from Nichols avenue and Morris road to Nichols avenue and Good Hope road SE.

## Subprecinct, Tennallytown:

Changed from overhead to underground connection—Box No. 21, southwest corner of Wisconsin avenue and Pierce Mill road NW.

Box No. 43, and old booth movement, located in the watch box at Thirty-third place and Newark street NW., was replaced by a new Dawson wall box, No. 27, and located on the southwest corner of Thirty-fourth and Newark streets.

On July 1, 1910, the distribution of boxes among the precincts was as follows:

Precinct.	Wall boxes.		Booths.	Total.
	Under-ground.	Over-head.		
First.....	26	1	.....	27
Second.....	21	1	.....	22
Third.....	28	8	.....	36
Fourth.....	15	15	.....	30
Fifth.....	16	11	.....	27
Sixth.....	24	.....	.....	24
Seventh.....	17	3	.....	20
Eighth.....	23	1	.....	24
Ninth.....	15	18	1	34
Tenth.....	25	11	2	38
Eleventh.....	.....	17	3	20
Substation, Tennallytown.....	5	10	3	18
Total.....	215	96	9	320

The total number of patrol boxes in service on July 1, 1910, was 320, of which 188 are of the latest improved pattern, known as the Dawson box, and 91 of the Gamewell key-break pattern, all of which are practically new; 32 of the Gamewell brush-contact pattern, which are in fairly good condition, and 9 of the old booth pattern. These old boxes and the booths in which they are placed should be replaced at once, as they are badly worn, far beyond the point of repair.

#### TELEPHONE SYSTEM.

The following 18 telephones were added to the two switchboards of the department during the year:

Health department, office of chief inspector, room 207.

Office of Assistant Assessor Talcott, room 115.

Office of the inspector of plumbing, extension, room 116.

Office of the building inspector, extension, room 110.

Office of the engineer of bridges, Sixteenth street and Piney Branch road.

Potomac Electric Power Company, meter room.

Potomac Electric Power Company, contract office.

Smallpox Hospital, extension.

Property yards, Water and I streets SW.

Residence of H. G. Todd, foreman of repairs, street cleaning department, 427 Q street NW.

Residence of George H. Wigginton, repairman, electrical department, 912 H street NW.

Residence of C. Bailey, repairman, electrical department, 5825 Piney Branch road NW.

Residence of A. James, telegraph operator, electrical department, 807 F street SW.

Abbey Simmons School, extension, party line with supervising principal's room, Powell School.

No. 8 engine house, superintendent of machinery, extension.

No. 10 truck house, K street between Third and Four-and-a-half streets SW.

First police precinct station house, Twelfth street, between C and D streets NW.

The following telephones were discontinued during the year:

Residence of the superintendent of stables, street cleaning department.

Residence of Assistant Electrical Engineer Bleo.

Office of engineer of bridges, Sixteenth street and Piney Branch road.

Residence of C. C. Rogers, collector of taxes.

#### POLICE DEPARTMENT SWITCHBOARD.

The following 6 telephones were added during the year:

Office of the chief clerk, police department, room 219.

Central bureau, police department, in booth, room 107.

Residence of Capt. Charles T. Peck, 58 Q street NW.

Residence of Captain Doyle, 1416 Irving street NW., extension.

Residence of Inspector Gessford, extension, 1412 Irving street NW.

Office of the captain, No. 11 Precinct.

The following telephones on this switchboard were discontinued during the year:

Residence of Lieutenant Sutton, 925 R street NW.

Residence of Sergeant Dean, 444 New Jersey avenue SE.

#### WATER DEPARTMENT SWITCHBOARD.

The following three telephones were added during the year:

Bryant street station, meter storeroom.

Bryant street station, petometer drafting room.

Bryant street station, petometer repair shop.

One telephone on the police patrol service, first precinct, was discontinued, also 17 portable sets, 11 of which were used by the fire and electrical departments, and 6 by the telephone operators.

*Number of telephones connected to the District system on July 1, 1910.*

Offices in the District building.....	121
Residences of officials.....	18
Outside offices and institutions.....	45
Public schools.....	164
Fire department.....	51
Police department, private branch exchange.....	61
Franklin School, private branch exchange.....	18
Water department, private branch exchange.....	30
Police patrol service.....	331
Total.....	839

#### STORAGE-BATTERY SYSTEM.

The number of cells of storage battery in service July 1, 1910, was as follows:

On fire alarm circuits.....	1,862
On patrol circuits.....	226
On local circuits.....	86
Total.....	2,174

#### POLES AND OVERHEAD WIRES.

Under the authority of the act of Congress, approved June 30, 1902, regulating the use of telephone wires in the District of Columbia, the Chesapeake and Potomac Telephone Company has reported the following amount of work done during the fiscal year:

Poles erected in alleys within the prescribed area:

Line.....	61
Guy.....	13
Anchor.....	38
	— 112

Poles erected in streets within the prescribed area:

Anchor.....	1
-------------	---

Poles erected in alleys outside the prescribed area:

Line.....	147
Guy.....	7
Anchor.....	82
	— 236

Poles erected in streets outside the prescribed area:

Line.....	129
Guy.....	11
Anchor.....	20
	— 160

Total.....	509
------------	-----

## Poles taken down in alleys within the prescribed area:

Line.....	101
Guy.....	5
	<hr/> 106

## Poles taken down in streets within the prescribed area:

Line.....	4
Guy.....	2
	<hr/> 6

## Poles taken down in alleys outside the prescribed area:

Line.....	77
Guy.....	5
Anchor.....	4
	<hr/> 86

## Poles taken down in streets outside the prescribed area:

Line.....	98
Guy.....	16
Anchor.....	2
	<hr/> 116

Total..... 314

Net increase..... 195

## MISCELLANEOUS POLE WORK.

*Poles erected, taken down, moved, etc.*

	Poles erected.			Poles taken down.			Poles moved.		Poles re-placed.		Poles reset.		Increase.		Decrease.	
	Line.	Guy.	Anchor.	Line.	Guy.	Anchor.	Line.	Guy.	Line.	Guy.	Line.	Guy.	Line.	Guy.	Line.	Guy.
Chesapeake and Potomac Telephone Co.....	337	31	141	280	28	6	37	3	37	6	26	.....	57	3	.....	.....
Potomac Electric Power Co.....	371	8	17	6	1	.....	18	.....	30	2	.....	.....	365	7	.....	.....
Western Union Telegraph Co.....	1	2	.....	196	18	.....	1	.....	3	.....	.....	.....	.....	.....	195	16
Postal Telegraph-Cable Co.....	.....	.....	.....	75	9	.....	3	.....	3	.....	.....	.....	.....	.....	55	5
District of Columbia.....	20	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	729	45	158	557	56	6	59	3	73	8	26	.....	422	10	250	21

*List of poles of all kinds, July 1, 1910.*

	Line.	Guy.	Total.
District of Columbia.....	671	21	692
United States Government.....	297	1	298
Chesapeake and Potomac Telephone Co.....	5,381	668	6,049
Potomac Electric Power Co.....	3,659	69	3,728
Western Union Telegraph Co.....	1,086	1	1,087
Postal Telegraph-Cable Co.....	355	8	363
Brightwood Ry. Co.....	340	.....	340
Columbia Ry. Co.....	461	.....	431
Anacostia and Potomac Ry. Co.....	3	3	3
City and Suburban Ry. Co.....	86	.....	86
Georgetown and Tennallytown Ry. Co.....	304	.....	304
Capital Ry. Co.....	208	.....	208
Washington and Baltimore Transit Co.....	22	.....	22
Maryland and Washington Ry. Co.....	158	.....	158
Capital Traction Co.....	201	.....	201
Washington and Glen Echo Ry. Co.....	8	.....	8
Steam railroads.....	573	.....	573
Washington and Great Falls R. R. Co.....	401	.....	401
Total.....	14,214	768	14,982



## ELECTRIC-WIRING INSPECTION.

The work of the electric-wiring inspectors has increased over that of last year by nearly 100 per cent in the number of permits issued and 25 per cent in the number of inspections made. There has been, too, a corresponding increase in the amount of office work, which has taxed the clerical force to its capacity. The services of an additional clerk are badly needed, as has been recommended in the estimates for the fiscal year 1912. This increased inspection work has been carried on without any interruption to the work by inspection of the regular theaters, but has compelled the department to abandon any systematic inspection (after the initial inspection) of the large number of moving-picture theaters.

The following table shows the amount of work performed by this department in connection with the wiring inspection:

Permits issued by the inspector of buildings authorizing electrical wiring:		
Buildings.....	1,068	
Machinery.....	227	
Signs.....	105	
		1,400
Permits issued by the electrical department:		
For inside electrical work.....	1,992	
For outside electrical work.....	109	
Temporary permits.....	304	
Without fee.....	1	
Without fee.....	940	
Preliminary fee.....	375	
Quarterly permits.....	40	
		3,761
Certificates issued:		
Final.....	2,612	
Preliminary.....	18	
Without fee.....	254	
		2,884
Number of lamps and apparatus installed:		
Incandescent.....	77,872	
Arc lamps.....	127	
Miscellaneous.....	3,247	
Blank outlets.....	964	
Motors.....	475	
Total horsepower of motors.....	1,600	
Dynamos.....	25	
Total kilowatt capacity of dynamos.....	215.25	
Gas lamps erected outside.....	53	
		84,578.25
Defective wiring installations repaired:		
Reported by outsiders.....	2	
Reported by inspectors.....	335	
		337
Notices of defective wiring sent.....		1,526
Requests for inspections.....		36
Miscellaneous.....		6
Inspections in connection with yearly license.....		254
Fees paid to the collector of taxes:		
For permits.....		\$2,071
For certificates.....		2,726
Miscellaneous fees.....		375
		5,172
January 17, 1910, \$1 refunded on a final certificate.		
February 4, 1910, \$1 refunded on a final certificate.		

The work of the individual inspectors is summarized below:

Assistant electrical engineer:

Days in office.....	111	
Days on regular wiring inspection.....	157	
Days on miscellaneous work.....	18	
		286
Inspections during office hours.....	937	
Inspections on nights and Sundays.....	851	
		1, 788
Inspections of theaters.....	963	
Inspections of other wiring.....	825	
		1, 788

Inspector.	Days on duty.	Total inspections.	Average inspections per day.
1.....	258	4, 330	16.78
2.....	262	3, 449	13.10
3.....	259	2, 414	9.32
4.....	259	3, 374	13.02
Assistant electrical engineer.....	157	1, 788	11.38
Total.....	1, 195	15, 355	63.60

*Cases taken to the police court during the year.*

Cause.	Fines.
Concealing wiring before inspection.....	\$5.00
Do.....	10.00
Do.....	25.00
Do.....	(a)
Failure to comply with official notice.....	10.00
Installing wiring without a permit.....	10.00
Do.....	15.00
Do.....	10.00
Total.....	75.00

<sup>a</sup> Case dismissed.

MISCELLANEOUS WORK.

This department drew up plans and specifications for and supervised the construction of the electric wiring installations for the following municipal buildings:

1. Additional wiring, engineer department stables.
2. New panel boards, Washington Public Library.
3. Complete wiring plans for No. 23 engine house.
4. Complete wiring plans for new No. 2 engine house.
5. Wiring plans for No. 9 engine house.
6. Wiring for Anacostia police station.
7. Wiring for buildings of department of trees and parking, Canal and B streets SW.
8. Machine-shop wiring, No. 8 engine company.
9. Additions and repairs to wiring in No. 5 truck house.
10. Border lights for assembly room, Central High School.

During the year the exact locations of all lamp-posts, telephone, telegraph, and electric light poles within the fire limits were carefully measured and plotted on a set of maps to a scale of 50 feet to the inch. This is to be the permanent record of such constructions, none having ever before been kept.

## STATEMENT OF RECEIPTS AND EXPENDITURES.

## STREET LIGHTING.

*Receipts.*

Appropriations.....	\$280,000.00
Repayments by Baltimore and Ohio Railroad.....	465.65
Repayments by Philadelphia, Baltimore and Washington Railroad.....	<sup>a</sup> 2,959.22
Repayments by Washington Terminal Company.....	<sup>a</sup> 3,680.83
Repayments by Washington, Spa Spring and Gretna Railroad Company..	29.65
Total.....	287,105.70

*Expenditures.*

Mantle gas lighting:		
American Street Lighting Company.....	\$186,383.93	
Deductions for defective service.....	122.08	186,261.85
Mantle naphtha lighting:		
American Street Lighting Company.....	33,125.48	
Deductions for defective service.....	262.96	32,862.52
Flat-flame gas lighting:		
Washington Gas Light Company.....	287.99	
Deductions for defective service.....	.10	287.89
Incandescent electric lighting:		
Potomac Electric Power Company.....	48,956.97	
Deductions for defective service.....	107.94	48,849.03
Street designation lighting:		
Potomac Electric Power Company.....	310.26	
Deductions for defective service.....	.61	309.65
Washington Gas Light Company.....	5,876.46	
Deductions for defective service.....	.95	5,875.51
Georgetown Gas Light Company.....	274.09	
Deductions for defective service.....	.55	273.54
Posts and lanterns.....		106.90
Paints, oil, etc.....		63.38
Street-sign material.....		597.65
Livery.....		1,020.00
Car tickets.....		25.00
Repairs to bicycles.....		19.50
Blacksmith shop expenses.....		156.80
Rent of storeroom.....		240.00
Erecting and removing posts.....		304.50
Pay roll, labor.....		1,960.63
Cartage.....		75.20
Repairs to pavements.....		33.12
Miscellaneous.....		31.56
Total.....		279,354.23

## ELECTRIC ARC LIGHTING.

*Receipts.*

Appropriation.....	\$125,000.00
Repayments by Washington Terminal Company.....	<sup>a</sup> 960.85
Repayments by Philadelphia, Baltimore and Washington Railroad.....	<sup>a</sup> 594.99
Total.....	126,555.84

<sup>a</sup> Due, but not paid.

*Expenditures.*

Arc lighting:		
Potomac Electric Power Company.....	\$123,727. 15	
Deductions for defective service.....	210. 33	
		123,516. 82
Labor pay roll.....		827. 00
Moving arc poles.....		180. 00
Total .....		124,523. 82

## GENERAL SUPPLIES.

*Receipts.*

Appropriation.....	\$13,000. 00	
Repayment.....	173. 13	
Total .....		13,173. 13

*Expenditures.*

Office expenses.....	2,010. 72	
Stable expenses.....	1,153. 90	
Livery.....	1,200. 00	
Purchase of two wagons.....	256. 50	
Harness.....	122. 00	
Car tickets.....	55. 00	
Blacksmith's shop pay roll.....	128. 50	
Paints, oils, and glass.....	81. 32	
Telephone rental and service.....	4,194. 62	
Wire.....	400. 40	
Instruments and apparatus.....	699. 09	
Gas and electric current.....	16. 44	
Batteries and battery supplies.....	189. 90	
Tools and hardware.....	189. 52	
Line supplies.....	561. 81	
Conduit supplies.....	95. 96	
Conduit construction.....	44. 40	
Repairs to pavements.....	32. 51	
Bicycles and repairs.....	262. 90	
Cable.....	182. 27	
Labor pay roll.....	1,172. 76	
Miscellaneous.....	79. 62	
Total .....		13,130. 14

## WIRES UNDERGROUND.

*Receipts.*

Appropriation.....	\$11,000. 00	
Repayments.....	1,064. 38	
		12,064. 38

*Expenditures.*

Cable.....	2,954. 35	
Underground supplies.....	1,446. 71	
Building conduits.....	1,222. 55	
Pay roll.....	3,724. 43	
Posts.....	1,303. 75	
Wire.....	92. 00	
Repairs to pavements.....	995. 41	
Cartage.....	40. 00	
Tools.....	149. 70	
Miscellaneous.....	14. 65	
		11,946. 55

## EXTENSION OF POLICE-PATROL SYSTEM.

*Receipts.*

Appropriation.....	\$4,500.00
Repayments.....	49.90

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 4,549.90
*Expenditures.*

Patrol boxes.....	1,755.00
Labor pay roll.....	1,661.72
Cable.....	179.20
Wire.....	704.28
Repairs to pavements.....	139.22
Line supplies.....	71.40
Conduit construction.....	32.80

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 4,543.62

## PURCHASE AND ERECTION OF FIRE-ALARM BOXES.

*Receipts.*

Appropriation.....	\$4,000.00
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*Expenditures.*

Fire-alarm boxes.....	1,910.00
Posts.....	633.75
Conduit construction.....	139.19
Cable.....	396.80
Wire.....	102.00
Repairs to pavements.....	216.95
Labor pay roll.....	537.63

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 3,936.32

## EXTENSION OF TELEPHONE SYSTEM, PUBLIC SCHOOLS.

*Receipts.*

Appropriation.....	\$400.00
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*Expenditures.*

Conduit connections.....	75.76
Instruments and apparatus.....	16.50
Line supplies.....	52.50
Wire.....	219.67

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 364.43

Respectfully submitted.

WALTER ALLEN,  
Electrical Engineer, District of Columbia.

Capt. E. M. MARKHAM,  
Corps of Engineers, U. S. Army,  
Assistant to the Engineer Commissioner, District of Columbia.

## RECORD DIVISION.

[Directly under the supervision of the Engineer Commissioner.]

CHIEF CLERK OF THE ENGINEER DEPARTMENT.....	DANIEL E. GARGES. DANIEL E. GARGES, Chief Clerk, Engineer Department.
WHARF COMMITTEE.....	T. J. C. BAILY, Jr., Engineer of Bridges. RUSSELL DEAN, Harbor Master. Capt. E. M. MARKHAM, Assistant to Engineer Commissioner.
BOARD FOR CONDEMNATION OF INSANITARY BUILDINGS.....	WILLIAM C. WOODWARD, Health Officer, District of Columbia. MORRIS HACKER, Inspector of Buildings.
ASSISTANT ENGINEER IN CHARGE OF ROCK CREEK PARK.....	L. R. GRABILL.
SUPERINTENDENTS OF DISTRICT BUILDING.....	Capt. E. M. MARKHAM, Capt. MARK BROOKE, Assistants to Engineer Commissioner.

### REPORT OF THE CHIEF CLERK OF THE ENGINEER DEPARTMENT.

WASHINGTON, D. C., September 9, 1910.

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year ended June 30, 1910:

Communications received, briefed, recorded, and indexed.....	14,854
Vouchers prepared.....	469
Letters sent.....	5,400
Contracts drawn.....	230

The tables accompanying this report show—

1. The expenditures from general appropriations for forage, horses, wagons, carts, etc.
2. Schedule of proposals received during the year.
3. Statement of contracts entered into during the year.

Very respectfully,

DANIEL E. GARGES,  
Chief Clerk, Engineer Department.

Maj. WILLIAM V. JUDSON,  
Corps of Engineers, U. S. Army,  
Engineer Commissioner, District of Columbia.

*Statement of expenditures from general appropriations for forage, horses, wagons, carts, etc., fiscal year 1910.*

Cleaning and repairing sewers and basins.....	\$4,391.00
Main and pipe sewers.....	366.41
Suburban sewers.....	512.83
Grade crossings.....	244.00
Assessment and permit work.....	724.57
Georgetown schedule.....	53.45
Northwest schedule.....	94.82
Southwest schedule.....	35.56
Southeast schedule.....	92.47
Northeast schedule.....	94.82
Repairs to streets, avenues, and alleys.....	379.28
Construction and repair of bridges.....	94.82
Park commission.....	1,954.33
Repairs to schools.....	378.85
Repairs to plumbing—schools.....	58.47
Repairs to police stations.....	35.56
Repairs to engine houses.....	43.96
General expenses, water department.....	1,631.78
High service, water department.....	8,341.07
Total.....	19,528.05

## SCHEDULE OF PROPOSALS RECEIVED DURING THE FISCAL YEAR 1909-10.

### PROPOSALS FOR CONSTRUCTION OF MUNICIPAL BUILDINGS.

*Proposals for construction of truck house No. 10 in square No. 542, K street between  
Third street and Four-and-a-half street SW.*

[Opened July 12, 1909, at 12 o'clock noon.]

Benj. B. Knell.....	\$22,700
Burgess & Parsons.....	21,270
Boyle-Robertson Construction Company (Incorporated) .....	23,618
Wm. E. Mooney.....	23,818
H. J. Bieber.....	28,700
Jos. H. Gibbons.....	22,393
J. M. Dunn.....	20,995

*Schedule of proposals for constructing a twelve-room school building, No. 156 (Strong John  
Thomson), located on lots Nos. 19 to 24, inclusive, square No. 284, southwest corner  
of L and Twelfth streets NW., District of Columbia.*

[Opened September 20, 1909, at 12 o'clock noon.]

Bidder.	Price, com- plete.	Alternate bid—										
		A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.
W. H. McCray.	\$114,000	-\$1,000	-\$250	+\$850	+\$1,050	+\$500	+\$1,600	-\$75	-\$400	.....	.....	+\$500
Burgess & Par- sons.....	115,847											
John McGregor.	115,000	- 1,000	- 750	+ 535	+ 870	+ 535	+ 2,500	+ 600	- 461	+\$1,100	+\$900	+ 600
Milton C. Davis	125,877	- 969	-1,750	+ 225	+ 300	+ 45	+ 2,000	- 60	- 650	+ 2,000	+1,725	+ 275
R. T. Hum- phrey.....	109,000	- 1,000	- 400	+ 400	+ 470	+ 170	+ 1,400	- 100	- 500	+ 1,000	+ 500	+ 400
Geo. E. Wyne..	112,000	- 1,000	- 800	+ 350	+ 500	+ 200	+ 1,500	- 350	- 400	+ 800	+ 350	+ 600

*Schedule of proposals for constructing a four-room addition to the Monroe school building,  
No. 72, located on Columbia road, between Sherman and Georgia avenues, block 6,  
Mount Pleasant.*

[Opened November 15, 1909, at 12 o'clock noon.]

Bidder.	Price, complete.	Alternate bid—	
		A.	B.
W. E. Mooney.....	\$43,746	+ \$1,500	.....
J. M. Dunn.....	40,923	+ 1,000	-\$60
Jos. H. Gibbons.....	44,300	+ 3,000	+ 300
Burgess & Parsons.....	43,270	+ 350	90
W. H. McCray.....	44,800	+ 1,500	10
Boyle-Robertson Construction Co.....	44,163	+ 2,000	25
Thos. H. Melton.....	41,535	+ 1,500	50
Geo. E. Wyne.....	43,000	+ 400	100

a No deposit.

*Schedule of proposals for constructing convenience station No. 3, to be located at the southwest corner of reservation No. 8, Washington, D. C.*

[Opened January 17, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid—		
		A.	B.	C.
Boyle-Robertson Construction Co. (Incorporated).....	\$16,519	\$657	\$897	\$100
J. M. Dunn.....	17,506	700	920	250
W. H. McCray.....	18,200	605	807	100
W. E. Mooney.....	20,731	582	862	862
Geo. E. Wyne.....	20,700	700	900	200
Burgess & Parsons.....	16,600	250		

*Schedule of proposals for constructing convenience station No. 5, to be located on the triangle west of Dupont Circle, Washington, D. C.*

[Opened January 17, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid—		
		A1.	B1.	C1.
Boyle-Robertson Construction Co. (Incorporated).....	\$10,321	\$361	\$527	\$50
J. M. Dunn.....	12,100	360	550	250
W. H. McCray.....	9,825	361	527	100
W. E. Mooney.....	11,918	361	527	
Geo. E. Wyne.....	15,000	400	600	150
Burgess & Parsons.....	13,000	200		

*Schedule of combined proposals for constructing two public convenience stations Nos. 3 and 5, to be located at the southwest corner of reservation No. 8, and on the triangle west of Dupont Circle, Washington, D. C.*

Bidder.	Price complete.	Price with alternate bids added—			
		A and A1.	B and B1.	C and C1.	Contracts for construction of the two stations.
Boyle-Robertson Construction Co. (Incorporated)....	\$26,648	\$27,648	\$28,072	\$26,798	\$26,648
J. M. Dunn.....	29,600	30,660	32,130	32,630	32,600
W. H. McCray.....	28,000	28,966	29,334	29,525	28,000
Geo. E. Wyne.....	35,000	36,000	37,300		
Burgess & Parsons.....	29,600				

*Schedule of proposals for constructing a four-room addition to the Monroe school building, No. 72, located on Columbia road between Sherman and Georgia avenues, block 6, Mount Pleasant, D. C.*

[Opened January 18, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid—		
		A.	B.	C.
Boyle-Robertson Construction Co. (Incorporated).....	\$39,916	\$300	\$100	\$100
J. M. Dunn.....	37,777	350	360	25
W. E. Mooney.....	38,999	275	381	75
Geo. E. Wyne.....	38,900	300	200	100
W. H. McCray.....	38,500	250	550	75
Thos. H. Melton.....	37,990	200	350	200
Burgess & Parsons.....	39,419	300	200	100



*Schedule of proposals for constructing an engine house, No. 23, to be located on G street, between Twenty-first and Twenty-second streets, Washington, D. C.*

[Opened January 27, 1910, at 12 o'clock noon.]

Burgess & Parsons.....	\$28,200
J. M. Dunn.....	29,995
W. E. Mooney.....	27,920
Geo. E. Wyne.....	27,300
Thos. H. Melton.....	28,790
W. H. McCray.....	27,500
Boyle-Robertson Construction Company.....	29,981

*Schedule of proposals for constructing additions and making alterations to the Western High School, Thirty-fifth street, between R and Reservoir streets NW.*

[Opened February 7, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid—				
		A.	B.	C.	D.	E.
W. E. Mooney.....	\$118,695	—\$7,300	—\$2,283	—\$1,800	—\$21,715	—\$1,400
Gormley & Poynton Co.....	110,000	— 5,600	— 3,300	— 900	— 20,000	— 350
Thos. H. Melton.....	106,300	— 4,900	— 2,900	— 1,900	— 25,000	— 1,400
W. A. McCray.....	107,000	— 5,788	— 1,900	— 2,300	— 22,000	— 1,450

*Schedule of proposals for constructing engine house, No. 2, located on part of lots 6 and 7, square No. 319, fronting on Twelfth street, between G and H streets NW., Washington, D. C.*

[Opened February 8, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid—			
		A.	B.	C.	D.
Page Construction Co.....	\$53,000	—\$600	+\$600	—\$100	—\$900
J. M. Dunn.....	42,160	.....	+ 600	.....	— 550
Geo. E. Wyne.....	42,000	— 600	+ 500	.....	— 200
W. H. McCray.....	41,800	— 825	+ 150	— 125	— 985
Burgess & Parsons.....	45,195	— 800	.....	.....	— 250
W. E. Mooney.....	43,976	— 660	.....	— 130	— 600
Thos. H. Melton.....	39,990	— 600	+ 250	— 150	— 500
Boyle-Robertson Construction Co.....	41,331	— 536	+ 350	— 100	— 900

*Schedule of proposals for constructing the John Eaton School Building, No. 160, to be located at the northeast corner of Lowell and Thirty-fourth streets, lots 2 to 11, inclusive, block 4 (taxed as square 2088), subdivision of Cleveland Heights, D. C.*

[Opened February 17, 1910, at 12 o'clock noon.]

Bidder.	Price complete.		Alternate bid—							
	Proposal No. 1.	Proposal No. 2.	A.	B.	C.	D.	E.	F.	G.	H.
Geo. E. Wyne.....	\$58,700	.....	+\$200	—\$200	—\$200	.....	— \$600	—\$500	—\$300	+\$350
W. E. Mooney.....	65,775	+\$65,775	+ 250	— 475	— 150	—\$575	— 1,100	— 595	— 117	+ 327
Thos. H. Melton.....	63,348	.....	+ 140	— 375	— 150	— 450	— 1,500	— 650	— 320	+ 327
Burgess & Parsons..	61,000	.....	.....	— 200	— 75	— 200	— 300	— 500	— 300	+ 300
W. H. McCray.....	62,000	.....	+ 490	— 265	— 100	— 425	+ \$3,000	— 950	— 260	+ 327

<sup>a</sup> Complete in 8 months.

<sup>b</sup> Make building larger.

*Schedule of proposals for constructing an eight-room school building, No. 159, to be located at corner of Tenth and E streets SW.*

[Opened February 23, 1910, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate bid A.
Boyle-Robertson Construction Co.....	\$61,881	+315
Thos. H. Melton.....	59,975	+325
R. T. Humphrey.....	64,500	+330
J. M. Dunn.....	61,000	+350
Geo. E. Wyne.....	61,000	+350
Burgess & Parsons.....	61,800	+325
W. H. McCray.....	58,391	+351
W. E. Mooney.....	61,861	+333

*Schedule of proposals for constructing an addition and making alterations to the Chevy Chase School, Connecticut avenue, between Northampton and McKinley streets NW.*

[Opened March 3, 1910, at 2 o'clock p. m.]

Bidder.	Price complete.	Alternate bid—			
		A.	B.	C.	D.
W. E. Mooney.....	\$45,999	—\$160	— \$300	—\$3,100	—\$2,000
Howison & Skinner.....	44,822	— 160	—1,600	— 2,756	— a 286
Thos. H. Melton.....	43,900	— 160	— 250	— 2,500	— b1,526
Geo. E. Wyne.....	46,700	— 200	— 300	— 2,800	— 2,400
					— 600

a 12-inch.

b 6-inch.

*Schedule of proposals for reductions in bids for constructing an addition and making alterations at the Chevy Chase School, Connecticut avenue NW., between Northampton and McKinley streets.*

[Opened March 9, 1910, at 12 o'clock m. Original bids for this school were opened March 3, 1910, at 2 o'clock p. m.]

DEDUCTION MADE FROM ORIGINAL BID BY HOWISON & SKINKER.

- For omitting eight bookcases and making all class rooms 24 feet in lieu of 26 feet, as shown on plans, price for the work complete..... \$34,271
- Using lime mortar in lieu of cement above first-floor joists, deduct. \$325
- Using cement wash on exterior brick wall in lieu of oil and paint, deduct ..... 100

Deduct proposal 2 and 3..... 425

Lowest figure offered..... 33,846

DEDUCTION MADE FROM ORIGINAL BID BY THOS. H. MELTON.

Will make a deduction from the original estimate as modified by alternates A, B, and C of \$5,100.

Original bid..... \$43,900

Less alternates A, B, C..... 2,910

..... 40,990

Less further deduction..... 5,100

Lowest figure offered..... 35,890

*Schedule of proposals for constructing a two-room school building, No. 161, on Bunker Hill Road, Brookland, D. C.*

[Opened April 21, 1910, at 2 o'clock, p. m.]

Bidder.	Price complete.	Alternate bid—											Combined proposal— Price for all three schools
		A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	
Howison & Skinker...	\$23,850	—\$200	—\$80	—\$450	—\$102	—\$30	.....	—105	—\$51	—\$300	—\$118	—\$81	\$96,000
Burgess & Parsons...	22,500	.....	—30	—250	—90	—30	—\$30	—100	—10	—200	—115	—50	85,000
Pfoge & Luebkert Co.	26,862	—20	—50	—440	—20	—50	—12	—400	—70	—300	—117	—60	98,800
Jos. H. Gibbons.....	22,990	—267	—35	—900	—87	—60	—30	—250	—30	—250	—40	—50	.....
W. E. Mooney.....	24,474	.....	—75	—700	—100	—115	—75	—175	—50	—175	—85	—65	96,357
Boyle-Robertson Construction Co.	24,790	.....	—200	.....	—50	.....	.....	—50	—25	—100	—50	—25	89,000

*Schedule of proposals for constructing a four-room addition to the Lovejoy School building, No. 124, located on the northwest corner of Twelfth and D streets NE., District of Columbia.*

[Opened April 21, 1910, at 2 o'clock p. m.]

Bidder.	Price complete.	Alternate bid—					
		A.	B.	C.	D.	E.	F.
Boyle-Robertson Construction Co.....	\$32,983.50	\$—25.00	— \$50.00	—\$166.00	—\$10.00	—\$20.00	+ \$500.00
Hoge & Leubkert Co.	37,200.00	—122.00	—1,147.00	—166.00	—45.00	—40.00	+ 300.00
W. E. Mooney.....	34,956.00	—115.00	—1,147.00	—160.00	—125.00	—25.00	+ 150.00
Burgess & Parsons.....	33,700.00	—75.00	—500.00	—160.00	—20.00	—75.00	+ 475.00
Howison & Skinker...	37,873.00	—80.00	—700.00	—166.00	—40.00	—300.00	+ 450.00

PROPOSALS FOR REPAIRS, ETC., TO MUNICIPAL BUILDINGS.

*Schedule of proposals for repairs to be made to and changes made in plumbing in Payne School building, No. 98, and Douglas School building, No. 99.*

[Opened July 10, 1909, at 12 o'clock noon.]

Bidder.	Payne School.			Douglas School.		
	Mott closets.	Wolff closets.	Clows closets.	Mott closets.	Wolff closets.	Clows closets.
E. J. Hannan.....	\$3,574.00	.....	\$3,574.00	\$3,498.50	.....	\$3,498.50
Hutchinson & McCarthy.....	.....	.....	3,417.00	.....	.....	3,443.00
Wm. Rothwell & Son.....	.....	\$3,281.00	(a)	.....	\$3,396.00	(a)
S. S. Shedd & Bro. Co.....	.....	3,352.00	(b)	.....	3,305.50	(b)

<sup>a</sup> Add \$6 each.

<sup>b</sup> Add \$7.50 each.

*Schedule of proposals for furnishing and installing two horizontal boilers in basement of the Dennison School, S street between Thirteenth and Fourteenth streets NW.*

[Opened August 2, 1909, at 2 p. m.]

Chesapeake Machine Company.....	\$1,832
John W. Danforth Company.....	1,850
G. W. Forsberg.....	1,700
Standard Engineering Company.....	1,745
G. & W. Manufacturing Company.....	1,513
Cathell Brothers & Co.....	1,600

*Schedule of proposals for the construction of juvenile water-closets, lavatory, partitions, etc., in Lucretia Mott School, No. 153, on Fourth and W streets NW.*

[Opened Monday, August 16, 1909, at noon.]

Benj. B. Knell.....	\$590
Jas. H. Gibbons.....	573

*Schedule of proposals for installing boilers, etc., Central High School.*

[Opened August 25, 1909, at 12 o'clock noon.]

Bidder.	Price complete.	Time.
Keystone Furnace Co.....	\$1,293	Days. 65
G. W. Forsberg.....	1,544	40
J. E. Hurley.....	1,568	(a)

<sup>a</sup> By September 15.

*Schedule of proposals for improvement to grounds Thos. B. Bryan School, B street SE., between Thirteenth and Fourteenth streets.*

[Opened August 26, 1909, at 12 o'clock noon.]

Bidder.	Price complete.	Time.
R. J. Beall Construction Co.....	\$112	Days. 15
R. E. Boiseau.....	350	20
W. A. Fry.....	219	30
Martin McNamara.....	385	20

*Schedule of proposals for furnishing and installing new boiler at the Industrial Home School.*

[Opened August 30, 1909, at 12 o'clock noon.]

Bidder.	Price complete.	Time.
Dowd Bros.....	\$780	Weeks.
G. W. Forsberg.....	1,111	
G. & W. Manufacturing Co.....	843	6
Keystone Furnace Co.....	1,039	
J. E. Hurley.....	797	

*Schedule of proposals for repairs to and changes in plumbing in Congress Heights School building, No. 111, job No. 202.*

[Opened October 2, 1909, 12 o'clock noon.]

Bidder.	Closet.	
	Wolff.	Clow.
S. S. Shedd & Bro. Co.....	\$4,187	(a)
Wm. Rothwell & Son.....	4,149	(b)
Frederick C. Stelzer.....		\$4,733

<sup>a</sup> Add \$7.50 each.

<sup>b</sup> Add \$6 each.

*Schedule of proposals for constructing five portable schoolhouses, to be located in the District of Columbia.*

[Opened October 4, 1909, at 12 o'clock noon.]

Bidder.	Price complete.		
	One building near Orr School.	One building near Chevy Chase School.	Three buildings near Armstrong Manual Training School.
W. E. Mooney.....	\$2,975	\$3,075	\$8,627
W. H. Childs.....	2,507	2,532	2,507
Jos. H. Gibbons.....	2,420	2,420	7,170
Ducker Co.....	2,862	2,862	8,586
Do.....	2,262	2,262	2,262

*Schedule of proposals to regulate parking on R street side of Business High School (rejected).*

[Opened October 11, 1909, at 12 o'clock noon.]

Bidder.	Price complete.
R. J. Beall Construction Co.....	\$190
R. E. Boiseau.....	300

*Schedule of proposals to complete all cement steps, driveways, coping, splash, and curb work at the new addition to the Business High School, R street, between Eighth and Ninth streets NW.*

[Opened October 11, 1909, at 12 o'clock noon.]

Bidder.	Grading and cement work.	Granite curb.
R. J. Beall Construction Co.....	\$339	(a)
R. E. Boiseau.....	320	(b)
Lake Stone Co.....	323	(c)

<sup>a</sup> Add \$18.

<sup>b</sup> Entire job with granite curb, \$335.

<sup>c</sup> Add \$14.

*Schedule of proposals to pave the section shown on drawing, located at the R street side of the Business High School, between Eighth and Ninth streets NW.*

[Opened October 11, 1909, at 12 o'clock noon.]

Bidder.	Price complete.	Alternate.
R. J. Beall Construction Co.....	\$470	(a)
R. E. Boiseau.....	596	(b)

<sup>a</sup> If 4-inch base and 1½-inch top of granolithic grooved pavement is laid in place of asphalt block, deduct \$115.

<sup>b</sup> If tar grouting between asphalt blocks is omitted, deduct \$41.

*Schedule of proposals to furnish wire guards, as specified, Cooke School building, located at Seventeenth street and Columbia road NW.*

[Opened October 20, 1909, at 12 o'clock noon.]

Fred S. Giehner.....	\$68.60
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*Schedule of proposals for furnishing five portable school buildings in the District of Columbia.*

[Opened November 1, 1909, at 12 o'clock noon.]

Bidder.	Price complete.		Reerect each building.	Time for completion.
	Lot.	Each.		
Springfield Portable House Co.....	\$8,275.00	\$1,655.00	\$100.00	<i>Days.</i> 60
Mershon & Morley.....	7,937.80	1,587.56	125.00	90
(A) Ducker Co.....		2,262.00	225.00	60
(B) Ducker Co.....		2,000.00	200.00	60

*Schedule of proposals for grading and sodding parking in front of the new addition to the Business High School.*

[Opened November 18, 1909, at 12 o'clock noon.]

R. J. Beall Construction Company ..... \$250

*Schedule of proposals for painting, remodeling vestibules, iron fencing, carpentry, and plumbing at the new addition to the Business High School, Washington, D. C.*

[Opened January 11, 1910, at 12 o'clock noon.]

Bidder.	A 1.— Painting.	Work on Eighth- street en- trance and ves- tibules.	A 3.— Iron fence on R street.	A 4.— Work on room 58.	A 5.— Work in assembly hall and gymna- sium.	A 6.— Work in rooms 125, 126, and 127.	A 7.— Work in room 75.	A 8.— Work in room 57, complete with cold water supply.	A 8.— Com- plete with hot and cold water supply.
Jos. H. Gibbons.....	\$945	\$268	\$97	\$93	\$300	\$113	\$83	\$63	\$91
Wm. Rothwell & Sons.....	695	325	90	90	325	116	75	65	75

*Schedule of proposals for constructing and installing cabinets and tables in the new addition to the Business High School.*

[Opened January 11, 1910, at 12 o'clock noon.]

[No proposal received.]

*Schedule of proposals for furnishing and installing 24 steel book closets in the Petworth, Garfield, and Powell school buildings.*

[Opened December 28, 1909, at 12 o'clock noon.]

Bidder.	Price per closet.	Time.
		<i>Days.</i>
The Crown Metal Construction Co. (by check W. B. Moses & Sons).....	\$26.00	60
The Jamestown Metal Furniture Co.....	55.00	65
The Van Dorn Iron Works Co.....	35.00	60
Edward Darby & Sons Co. (Incorporated).....	35.00	60
The General Fireproofing Co.....	60.42	90

*Schedule of proposals for installing a water-supply system at the Congress Heights School building.*

[All bids rejected.]

[Opened January 24, 1910, at 12 o'clock noon.]

Bidder.	Price, complete.	Alternate bid.	Time.
Chas. A. Barker.....	\$3,500	\$740	90 days.
Wm. Rothwell & Son.....	3,590	220	
G. & W. Manufacturing Co.....	3,443	200	
Columbia Pump and Well Co.....	3,309	324	8 weeks.
McCay Engineering Co.....	3,737	37	

*Schedule of proposals for making changes in the plumbing at the Armstrong Manual Training School.*

[Opened March 9, 1910, at 2 o'clock p. m.]

Coberth, Hanes & White Company.....	\$307.00
Milton Bairstow.....	330.00
Wm. Rothwell & Son.....	336.00
The E. F. Brooks Company.....	340.91
S. S. Shedd & Bro. Company.....	350.00
M. J. McCarthy.....	317.00
Ed. J. Hannan.....	435.40
Louis Conradis.....	295.00

*Schedule of proposals for repairs to and changes in plumbing in Langdon School building, No. 108, job. 210.*

[Opened March 26, 1910, at 2 o'clock p. m.]

S. S. Shedd & Bro. Company.....	\$2,860
M. J. McCarthy.....	3,528
Warner & Rittenhouse.....	3,150
Coberth, Hanes & White Company (Incorporated).....	2,861
William Rothwell & Son.....	3,363
Clemmer & Woodfield.....	3,439

*Schedule of proposals for constructing an addition and making alterations to the Bennings School, No. 48, square 5063, Anacostia road, NE.*

[Opened April 21, 1910, at 2 o'clock p. m.]

Bidder.	Price, complete.	Alternate bid—		
		A.	B.	C.
Boyle-Robertson Construction Co.....	\$31,983	—\$1,000	—\$100	—\$20
W. E. Mooney.....	36,927	— 1,800	— 125	—127
Howison & Skinker.....	34,456	— 1,520	— 316	—100
Burgess & Parsons.....	30,800	— 1,350	— 200	—100
Hoge & Luebker Co.....	34,200	— 1,700	— 50	—100

*Schedule of proposals for making repairs to and changes in plumbing in Chevy Chase School building, No. 113, job No. 214.*

[Opened April 30, 1910, at 2 o'clock p. m.]

Warner & Rittenhouse.....	\$3,891
Ed. J. Hannan.....	4,386
Howison & Skinker.....	3,850
Standard Engineering Company.....	(a)
William Rothwell.....	3,499
S. S. Shedd & Bro. Company.....	3,559

<sup>a</sup> Clow closets, \$3,923; Wolf closets, \$3,843.

*Schedule of proposals for making repairs to and changes in plumbing in Reservoir School building, No. 110, job 213.*

[Opened April 30, 1910, at 2 o'clock p. m.]

William Rothwell & Son.....	(a)
Howison & Skinker.....	\$3,100.00
E. J. Hannan.....	3,089.50
Standard Engineering Company.....	(b)
S. S. Shedd & Bro. Company.....	2,817.00
Warner & Rittenhouse.....	3,033.00

*Schedule of proposals for finishing electric wiring at the Mott School, corner Fourth and Bryant streets NW.*

[Opened May 9, 1910, at 2 p. m.]

Capitol Electric Company.....	\$117
Carroll Electric Company.....	97

*Schedule of proposals for electrical work at engine house No. 2, located on part of lots 6 and 7, square No. 319, fronting on Twelfth street, between G and H streets NW.*

[Opened May 9, 1910, at 2 o'clock p. m.]

Bidder.	Price, complete.	Proposals for Nos. 2 and 23.
Carroll Electric Co.....	\$750	\$1,150
Capitol Electric Co.....	657	1,075
Kluckhuhn Bros.....	550	1,000

*Schedule of proposals for electrical work at engine house No. 23, located on G street, between Twenty-first and Twenty-second streets NW.*

[Opened May 9, 1910, at 2 p. m.]

Bidder.	Price, complete.	Proposals for Nos. 2 and 23.
Capitol Electric Co.....	\$437	\$1,075
Kluckhuhn & Bro.....	475	1,000
Carroll Electric Co.....	425	1,150

*Schedule of proposals for making certain repairs to and changes in the plumbing at the Armstrong Manual Training School building.*

[Received May 31, 1910.]

William Rothwell & Son.....	\$987
Warner & Rittenhouse.....	750

*Schedule of proposals for labor and materials for further work on the extension of the Business High School.*

[Opened June 6, 1910, at 2 o'clock p. m.]

Bidder.	Price complete.	Cabinet—		Plumb- ing.	Electrical work.	Repair work in room No. 50.
		No. 4.	No. 5.			
Jos. H. Gibbons.....	\$593	\$143	\$87	\$109	\$51	\$203
Wm. Rothwell & Son.....	647	150	80	111	70	236
Howison & Skinker.....	636	149	98	180	53	156

a Clow closets, \$2,754.

b Clow closets, \$3,180; Wolff closets, \$3,130.

c Informal; no deposit.



*Schedule of proposals for repairs to and changes in plumbing in Toner School Building,  
No. 114, Job No. 216.*

[Opened June 9, 1910, at 2 o'clock p. m. Deposit of \$300 required.]

Bidder.	Closet.	
	Wolff.	Clow.
Warner & Rittenhouse.....	\$3,438	(a)
S. S. Shedd & Bro. Co.....		\$3,349
Wm. Rothwell & Son.....	(b)	3,358
Coberth, Hanes & White.....	2,943	(c)

<sup>a</sup> Add \$96 for Clow closet.

<sup>b</sup> Less \$119 if Wolff closet.

<sup>c</sup> Add \$7 each for Clow closet and \$4 each for Mott fountain.

*Schedule of proposals for repairs to and changes in plumbing in Bruce School Building,  
Job No. 215.*

[Opened June 9, 1910, at 2 o'clock p. m. \$300 deposit required.]

Bidder.	Closet.	
	Wolff.	Clow.
Wm. Rothwell & Son.....	(a)	\$3,479
Warner & Rittenhouse.....	\$3,372	(b)
S. S. Shedd & Bro. Co.....		3,591
Coberth, Hanes & White Co.....	3,308	(c)

<sup>a</sup> Less \$127.50 if Wolff closets are used.

<sup>b</sup> Add \$102 for Clow closets.

<sup>c</sup> Add \$7 each for Clow closets and \$4 each for Mott fountains.

*Schedule of proposals for grading engine-house site, Randle Highlands.*

[Opened June 15, 1910, at 2 p. m.]

Bidder.	Price per cubic yard.	Time.
	Cents.	Days.
Harper & Voigt.....	\$0.41	30
Geo. Hyman.....	.57	40
Jas. A. Coyle.....	.33	30

*Schedule of proposals for doing cement work at convenience station at Thirteenth street  
and Pennsylvania avenue.*

[Opened June 17, 1910, at 2 o'clock p. m.; \$50 deposit required.]

Bidder.	Price, complete, for—		Time (working days).
	Two south copings.	Two north copings.	
R. J. Beall Construction Co.....	\$164.00	\$290.00	20
Southern Paving.....	208.00	347.00	15

## PROPOSALS FOR SEWER CONSTRUCTION.

*Schedule of proposals for constructing service sewers in the District of Columbia, 1910.*

[Opened August 30, 1909, at 12 o'clock noon.]

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	Vitrified brick masonry (per cubic yard).	Concrete masonry, Class "D" (per cubic yard).
The Warren F. Brenizer Co.....	\$0.69	\$15.00	\$20.00	\$7.90
R. J. Beall Construction Co.....	.69	13.50	20.00	7.39
E. G. Gummel.....	.77	14.00	22.00	7.75
James A. Coyle.....	.80	16.00	24.00	8.00
Geo. Hyman.....	1.25	14.00	21.00	7.15

*Schedule of proposals for the construction of extension of the storm-water outlet of the Anacostia trunk sewer to bulkhead line.*

[Opened September 27, 1909, at 12 o'clock noon.]

Bidder.	Ordinary excavation (per cubic yard).	Concrete masonry "B" (per cubic yard).	Concrete masonry "C" (per cubic yard).	Piling driven (per linear foot).	Lumber (per 1,000 feet b. m.).	Sewer brick masonry (per cubic yard).	Vitrified brick masonry (per cubic yard).
The Warren F. Brenizer Co.....	\$1.00	\$8.00	\$7.50	\$0.24	\$50.00	\$13.00	\$20.00
E. G. Gummel.....	1.00	10.00	9.50	.30	50.00	22.00	25.00
Ryan & Reilly.....	1.50	9.50	9.50	.35	50.00	15.00	20.00

*Schedule of proposals for the construction of sections F and G, east side intercepting sewer, boundary to Brookland.*

[Opened September 27, 1909, at 12 o'clock noon.]

Bidder.	Section F.		Section G.			
	Ordinary excavation (per cubic yard).	Concrete masonry "D" (per cubic yard).	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	Invert brick masonry (per cubic yard).	Concrete masonry "D" (per cubic yard).
The Warren F. Brenizer Co....	\$0.40	\$6.80	\$1.40	\$14.00	\$23.00	\$8.25
Jas. A. Coyle.....	.45	6.48	.90	24.00	26.00	8.00
Geo. Hyman.....	.50	8.25	.98	15.00	21.00	7.50
Thos. R. Riley.....	.65	7.60	.85	14.50	22.50	8.60
Ryan & Reilly.....	.60	8.90				
John E. Lyons.....	.65	7.49	.75	15.50	20.00	7.84
C. B. Clark & Co.....	.55	9.25	1.10	17.50	24.25	12.25
E. G. Gummel.....	.60	6.60	.70	14.00	20.00	7.00

*Schedule of proposals for the construction of the Piney Branch trunk sewer.*

[Opened September 27, 1909, at 12 o'clock noon.]

Bidder.	Ordinary excavation (per cubic yard).	Tunnel excavation (per linear foot).	Sewer brick masonry (per cubic yard).	Invert brick masonry (per cubic yard).	Concrete masonry "B" (per cubic yard).	Concrete masonry "C" (per cubic yard).
The Warren F. Brenizer Co...	\$0.50	\$16.00	\$13.00	\$21.00	\$7.10	\$6.75
C. B. Clark & Co.....	.90	23.25	18.50	25.00	9.00	8.25
Ryan & Reilly.....	.86	28.35	13.00	19.00	8.35	7.90
E. G. Gummel.....	.75	50.00	16.00	22.00	8.00	7.50
Deffenbough Constructing Co.	1.63	41.25	13.95	20.80	8.15	7.75

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer A.*—In Douglas street between Queens Chapel road and Twenty-second street NE.; also in Twenty-second street between Douglas and Channing streets; also in Channing street between Twenty-second and Twenty-fourth streets; also in Twenty-fourth street between Channing and Douglas streets; also in Douglas street between Twenty-fourth street and the Baltimore and Ohio Railroad; also in right of way between Douglas street and Mills avenue; also in Mills avenue between the Baltimore and Ohio Railroad and Evarts street.

Bidder.	Ordinary excavation (per cubic yard).	For sewer brick masonry laid (per cubic yard).	For 15-inch diameter pipe sewer laid (per linear foot).	For 12-inch diameter pipe sewer laid (per linear foot).	For 10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.50	\$15.00	\$0.69	\$0.56	\$0.48
Geo. Hyman.....	.95	15.00	.90	.75	.65
James A. Coyle.....	.49	12.00	.65	.55	.45
O. P. Allen.....	.65	16.00	.69	.59	.55
Thos. A. Barry & Co.....	.72	12.00	.90	.57	.51
Warren F. Brenizer Co.....	.65	13.00	.70	.60	.55
I. H. Fisher.....	.80	14.00	.75	.60	.55
Howard R. Bitting.....	.80	14.00	.75	.60	.55
The United Engineering and Construction Co.....	.95	15.00	.82	.67	.60

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer B.*—In Evarts street between Mills avenue and Queens Chapel road NE.

Bidder.	Ordinary excavation (per cubic yard).	12-inch diameter sewer laid (per linear foot).	10-inch diameter sewer laid (per linear foot).	Brick masonry (per cubic yard).
E. G. Gummel.....	\$0.60	\$0.56	\$0.48	\$15.00
Geo. Hyman.....	.95	.75	.65	15.00
James A. Coyle.....	.49	.55	.45	12.00
O. P. Allen.....	.65	.59	.55	16.00
Thos. A. Barry Co.....	.63	.57	.51	12.25
Warren F. Brenizer Co.....	.65	.60	.55	13.00
I. H. Fisher.....	.70	.65	.55	14.00
Howard R. Bitting.....	.70	.60	.55	14.00
The United Engineering and Construction Co.....	.85	.67	.60	15.00

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer C.*—In right of way in line of Girard street extended, NE., between Twenty-sixth and Vista streets; also in Vista street between Girard street extended and South Dakota avenue; also in South Dakota avenue between Vista and Irving streets.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	12-inch pipe sewer laid (per linear foot).	10-inch pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.60	\$15.00	\$0.56	\$0.48
Geo. Hyman.....	1.25	15.00	.85	.75
James A. Coyle.....	1.00	12.00	.55	.45
O. P. Allen.....	.65	16.00	.59	.55
Thos. A. Barry & Co.....	.98	12.25	.57	.51
Warren F. Brenizer Co.....	.90	13.00	.60	.55
I. H. Fisher.....	1.10	15.00	.70	.60
Howard R. Bitting.....	.78	14.00	.62	.58
The United Engineering and Construction Co.....	.92	15.00	.67	.60

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer D.*—In Twenty-sixth street NE., between Irving street and South Dakota avenue; also in South Dakota avenue, between Twenty-sixth street and Rhode Island avenue.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	12-inch diameter pipe sewer laid (per linear foot).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.60	\$15.00	\$0.56	\$0.48
Geo. Hyman.....	1.25	15.00	.85	.75
James A. Coyle.....	1.25	12.00	.55	.45
O. P. Allen.....	.75	16.00	.59	.55
Thos. A. Barry & Co.....	.93	12.25	.57	.51
Warren F. Brenizer & Co.....	.90	13.00	.60	.55
I. H. Fisher.....	1.10	15.00	.70	.60
Howard R. Bitting.....	.75	14.00	.62	.55
The United Engineering and Construction Co.....	1.00	15.00	.70	.65

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer E.*—In Woodbridge street NE., between Twenty-second and Twenty-fourth streets.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.55	\$15.00	\$0.48
Geo. Hyman.....	1.10	15.00	.75
James A. Coyle.....	.75	12.00	.45
O. P. Allen.....	.60	16.00	.55
Thos. A. Barry & Co.....	.74	12.25	.51
Warren F. Brenizer & Co.....	.75	13.00	.70
I. H. Fisher.....	.70	15.00	.60
Howard R. Bitting.....	.68	15.00	.55
The United Engineering and Construction Co.....	.90	15.00	.62

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer F.*—In Twenty-fourth street NE., between Woodridge street and Rhode Island avenue; also in Rhode Island avenue, between Twenty-fourth street and Mills avenue.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.50	\$15.00	\$0.48
Geo. Hyman.....	.90	15.00	.75
Jas. A. Coyle.....	.49	12.00	.45
O. P. Allen.....	.45	16.00	.55
Thos. A. Barry & Co.....	.54	12.25	.51
Warren F. Brenizer & Co.....	.65	13.00	.60
I. H. Fisher.....	.70	15.00	.55
Howard R. Bitting.....	.63	14.00	.55
The United Engineering and Construction Co.....	.85	15.00	.60

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer G.*—In Mills avenue NE., between Franklin and Irving streets.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	15-inch diameter pipe sewer laid (per linear foot).	12-inch diameter pipe sewer laid (per linear foot).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.60	\$15.00	\$0.69	\$0.56	\$0.48
Geo. Hyman.....	.90	15.00	.90	.75	.65
James A. Coyle.....	.75	14.00	.70	.60	.50
O. P. Allen.....	.65	16.00	.69	.59	.55
Thos. A. Barry & Co.....	.76	12.25	.92	.57	.51
Warren F. Brenizer & Co.....	.65	13.00	.70	.60	.55
I. H. Fisher.....	1.50	25.00	.90	.85	.75
Howard R. Bitting.....	.75	14.00	.75	.62	.55
The United Engineering and Construction Co.....	.89	15.00	.81	.65	.59

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer H.*—In Jackson street NE., between the east side intercepting sewer and Eighteenth street; also in Eighteenth street; also in Eighteenth street, between Jackson street and Fort Drive.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	12-inch diameter pipe sewer laid (per linear foot).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.50	\$15.00	\$0.56	\$0.48
Geo. Hyman.....	.90	15.00	.75	.65
James A. Coyle.....	.60	12.00	.60	.50
O. P. Allen.....	.60	16.00	.59	.55
Thos. A. Barry & Co.....	.54	12.25	.57	.51
Warren F. Brenizer & Co.....	.60	13.00	.60	.55
I. H. Fisher.....	1.00	15.00	.60	.58
Howard R. Bitting.....	.75	14.00	.62	.55
The United Engineering and Construction Co.....	.90	15.00	.67	.60

*Schedule of proposals for construction of sewers in Langdon, D. C.*

[Opened December 6, 1909, at 12 o'clock noon.]

*Sewer I.*—In Hamlin street NE. between Twenty-fifth and Twenty-sixth streets, also in Twenty-fifth street between Hamlin and Irving streets.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	10-inch diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$0.55	\$15.00	\$0.48
Geo. Hyman.....	.90	15.00	.75
Jas. A. Coyle.....	.60	12.00	.50
O. P. Allen.....	.60	16.00	.55
Thos. A. Barry & Co.....	.65	12.25	.51
Warren F. Brenizer & Co.....	.70	13.00	.60
I. H. Fisher.....	1.00	15.00	.58
Howard R. Bitting.....	.80	14.00	.55
The United Engineering and Construction Co.....	.98	15.00	.65

*Schedule of proposals for the construction of sewers in the vicinity of Brightwood, D. C.*

[Opened March 28, 1910, at 2 o'clock p. m.]

## SEWER A.

Bidder.	Ordinary excavation.	Sewer brick masonry (per cubic yard).	Vitrified brick masonry (per cubic yard).	Concrete masonry D (per cubic yard).	24-inch diameter pipe sewer (per linear foot).	21-inch diameter pipe sewer (per linear foot).	15-inch diameter pipe sewer (per linear foot).	10-inch diameter pipe sewer (per linear foot).
Warren F. Brenizer.....	<i>\$0.66</i>	<i>\$13.00</i>	<i>\$20.00</i>	<i>\$6.75</i>	<i>\$1.10</i>	<i>\$0.90</i>	<i>\$0.70</i>	<i>\$0.48</i>
Isaac H. Fisher.....	.85	15.00	20.00	8.25	1.20	1.00	.80	.60
James A. Coyle.....	.60	14.00	22.00	8.48	1.10	1.00	.70	.50
Geo. Hyman.....	.60	14.00	20.00	7.50	.95	.85	.65	.55
John Molloy and John Hirsch.....	.65	11.75	15.00	7.50	1.00	1.00	.95	.90
E. G. Gummel.....	1.00	17.00	23.00	9.00	1.20	1.10	.90	.70
Howard R. Bitting.....	.66	16.00	22.00	7.75	1.25	1.00	.85	.65
United Engineering and Construction Co.....	.74	15.60	25.60	9.75	1.35	1.27	1.00	.64
O. P. Allen.....	.47	14.00	20.00	6.75	.95	.88	.67	.49
R. J. Beall Construction Co.....	.69	14.60	20.00	7.75	1.19	1.09	.89	.69

NOTE.—Figures in italics indicate informal bids. Not sufficient deposit made.

*Schedule of proposals for the construction of sewers in the vicinity of Brightwood, D. C.*

[Opened March 28, 1910, at 2 o'clock p. m.]

## SEWER B.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	24-inch diameter pipe sewer (per linear foot).	15-inch diameter pipe sewer (per linear foot).	12-inch diameter pipe sewer (per linear foot).
Warren F. Brenizer.....	<i>\$0.60</i>	<i>\$13.00</i>	<i>\$1.14</i>	<i>\$0.70</i>	<i>\$0.60</i>
Isaac H. Fisher.....	.85	15.00	1.20	.80	.63
James A. Coyle.....	.58	14.00	1.10	.68	.58
Geo. Hyman.....	.60	15.00	.95	.65	.55
John Molloy and John Hirsch.....	.65	11.75	1.00	.95	.95
E. G. Gummel.....	1.00	17.00	1.20	.90	.80
Howard R. Bitting.....	.60	16.00	1.25	.80	.70
United Engineering and Construction Co.....	.86	15.60	1.35	1.00	.70
O. P. Allen.....	.47	14.00	.95	.67	.53
R. J. Beall Construction Co.....	.67	14.50	1.19	.89	.72
Philip B. Hoge.....	.78	14.00	1.10	.72	.61

NOTE.—Figures in italics indicate informal bids. Not sufficient deposit made.

*Schedule of proposals for the construction of sewers in the vicinity of Chevy Chase, D. C.*

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	18-inch diameter pipe sewer (per linear foot).
Warren F. Brenizer.....	<i>\$0.50</i>	<i>\$14.50</i>	<i>\$0.80</i>
Robert A. Conrad.....	1.06	19.56	.79
Geo. Hyman.....	.75	15.00	.80
Howard R. Bitting.....	.82	15.00	.95
E. G. Gummel.....	.80	17.00	.80
O. P. Allen.....	.45	15.00	.80
R. J. Beall Construction Co.....	.74	17.00	1.04
Philip B. Hoge.....	.76	15.50	.83

NOTE.—Figures in italics indicate informal bids. Not sufficient deposit made.

*Schedule of proposals for the construction of sewers in the vicinity of Petworth, D. C.*

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	Special molded concrete arch (per linear foot).	Special concrete masonry E (per cubic yard).	21-inch diameter sewer pipe (per linear foot).	15-inch diameter sewer pipe (per linear foot).	12-inch diameter sewer pipe (per linear foot).	10-inch diameter sewer pipe (per linear foot).
Warren F. Brenizer Co.....	\$0.60	\$13.50	\$0.18	\$8.10	\$0.92	\$0.73	\$0.60	\$0.50
Isaac H. Fisher.....	.69	14.00	.45	8.50	1.00	.83	.73	.60
Howard R. Bitting.....	.62	15.00	1.00	14.00	1.00	.78	.67	.62
United Engineering and Construction Co.....	.71	15.60	.65	10.70	1.27	1.00	.70	.64
O. P. Allen.....	.47	14.00	1.55	7.00	.80	.67	.58	.48

NOTE.—Figures in Italics indicate informal bids. Not sufficient deposit made.

*Schedule of proposals for the construction of sewers in the vicinity of Langdon.*

[Opened March 28, 1910, at 2 o'clock p. m.]

## SEWER A.

Bidder.	Ordinary excavation (per cubic yard).	Brick masonry (per cubic yard).	12-inch pipe sewer (per linear foot).	10-inch pipe sewer (per linear foot).
Warren F. Brenizer Co.....	\$0.75	\$13.00	\$0.65	\$0.60
Isaac H. Fisher.....	.62	14.00	.60	.55
Geo. Hyman.....	.65	15.00	.55	.45
Howard R. Bitting.....	.60	15.00	.60	.55
E. G. Gummel.....	.60	14.00	.66	.58
O. P. Allen.....	.47	14.00	.58	.48

## SEWER B.

Bidder.	Ordinary excavation (per cubic yard).	Brick masonry (per cubic yard).	15-inch pipe sewer (per linear foot).	12-inch pipe sewer (per linear foot).
Warren F. Brenizer Co.....	\$0.55	\$13.00	\$0.65	\$0.57
Isaac H. Fisher.....	.57	14.00	.75	.65
Geo. Hyman.....	.55	15.00	.65	.55
Howard R. Bitting.....	.60	15.00	.70	.60
E. G. Gummel.....	.60	14.00	.75	.66
O. P. Allen.....	.47	14.00	.67	.58

*Schedule of proposals for the construction of sewers in the vicinity of Brightwood, D. C.*

[Opened May 23, 1910, at 2 o'clock p. m.]

## SEWER A.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	Vitrified brick masonry (per cubic yard).	Masonry D (per cubic yard).	24-inch pipe sewer (per linear foot).	21-inch pipe sewer (per linear foot).	15-inch pipe sewer (per linear foot).	10-inch pipe sewer (per linear foot).
Hoge & Leubkert.....	\$0.74	\$14.50	\$21.00	\$8.20	\$1.04	\$0.92	\$0.76	\$0.62
Geo. Hyman.....	.60	13.00	20.00	7.50	.95	.85	.65	.45
E. G. Gummel.....	1.00	17.00	23.00	9.00	1.20	1.10	.90	.70
Holton Construction Co.....	.66	15.00	20.00	7.75	1.10	1.00	.85	.65
The Warren F. Brenizer Co.....	.58	13.00	20.00	6.75	1.05	.90	.65	.48

*Schedule of proposals for the construction of sewers in the vicinity of Brightwood, D. C.—*  
Continued.

## SEWER B.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	24-inch pipe sewer (per linear foot).	15-inch pipe sewer (per linear foot).	12-inch pipe sewer (per linear foot).
Hoge & Leubkert.....	\$0.68	\$14.50	\$1.04	\$0.76	\$0.70
R. J. Beall Construction Co.....	.56	13.00	1.10	.69	.60
Geo. Hyman.....	.60	14.00	.95	.65	.55
E. G. Gummel.....	1.00	17.00	1.20	.90	.80
Holton Construction Co.....	.66	15.00	1.10	.85	.70
The Warren F. Brenizer Co.....	.55	13.00	1.05	.65	.60

*Schedule of proposals for the construction of sewers in the vicinity of Cleveland Park, D. C.*

[Opened May 23, 1910, 2 o'clock p. m.]

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch-diameter pipe sewer (per linear foot).
Geo. Hyman.....	\$0.58	\$14.00	\$0.55
The Warren F. Brenizer Co.....	.55	13.00	.60
Jas. A. Coyle.....	.80	14.00	.70

*Schedule of proposals for the construction of sewers in the vicinity of Tennallytown, D. C.*

[Opened May 23, 1910, 2 o'clock p. m.]

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	10-inch-diameter pipe sewer (per linear foot).
R. J. Beall Construction Co.....	\$0.69	\$14.50	\$0.75
The Warren F. Brenizer Co.....	.55	13.00	.50
Jas. A. Coyle.....	.59	14.00	.49
Geo. Hyman.....	.75	15.00	.65
Hoge & Leubkert.....	.72	15.20	.63

*Schedule of proposals for the construction of sewers in the vicinity of Arizona avenue.*

[Opened May 23, 1910, 2 o'clock p. m.]

## SEWER A.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	21-inch-diameter pipe sewer (per linear foot).	15-inch-diameter pipe sewer (per linear foot).
R. E. Boiseau.....	\$0.58	\$13.20	\$0.84	\$0.67
The Warren F. Brenizer Co.....	.55	13.00	.90	.65
E. G. Gummel.....	1.00	18.00	1.10	1.00
Geo. Hyman.....	.58	14.00	.90	.68
R. J. Beall.....	.67	14.00	.94	.81
Hoge & Leubkert.....	.78	15.00	.92	.71



*Schedule of proposals for the construction of sewers in the vicinity of Arizona avenue—*  
Continued.

## SEWER B.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	15-inch-diameter pipe sewer (per linear foot).
R. E. Boiseau.....	\$0.58	\$13.20	\$0.67
The Warren F. Brenizer Co.....	.55	13.00	.63
E. G. Gummel.....	1.00	18.00	1.00
Geo. Hyman.....	.58	14.00	.68
R. J. Beall.....	.69	14.50	.81
Hoge & Leubkert.....	.78	15.00	.71

*Schedule of proposals for dredging in front of sewer outlets.*

[Opened June 20, 1910, at 2 o'clock p. m. \$200 deposit required.]

John H. Miller..... per cubic yard.. \$0.274

*Schedule of proposals for the construction of sewers in the District of Columbia.*

[Opened June 20, 1910, at 2 o'clock p. m.]

## SEWER A.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	18-inch-diameter pipe sewer laid (per linear foot).
E. G. Gummel.....	\$1.00	\$14.00	\$1.09
The Warren F. Brenizer Co.....	.60	13.00	.85

## SEWER B.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	18-inch-diameter pipe sewer laid (per linear foot).
Jas. A. Coyle.....	\$0.80	\$13.00	\$1.00
E. G. Gummel.....	1.10	14.00	1.09
The Warren F. Brenizer Co.....	.75	13.00	.85

## SEWER C.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry laid (per cubic yard).	15-inch-diameter pipe sewer (per linear foot).	12-inch-diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.00	\$14.00	\$0.91	\$0.73
The Warren F. Brenizer Co.....	.80	13.00	.80	.70

## SEWER D.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch-diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.00	\$14.00	\$0.73
The Warren F. Brenizer Co.....	.75	13.00	.70

*Schedule of proposals for the construction of sewers in the District of Columbia—Cont'd.*

## SEWER E.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.10	\$14.00	\$0.73
The Warren F. Brenizer Co.....	1.00	14.00	.75

## SEWER F.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.00	\$14.00	\$0.73
The Warren F. Brenizer Co.....	.65	13.00	.70

## SEWER G.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.15	\$14.00	\$0.73
The Warren F. Brenizer Co.....	1.00	14.00	.75

## SEWER H.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	12-inch diameter pipe sewer (per linear foot).
E. G. Gummel.....	\$1.00	\$14.00	\$0.73
The Warren F. Brenizer Co.....	.75	13.00	.70

## SEWER I.

Bidder.	Ordinary excavation (per cubic yard).	Sewer brick masonry (per cubic yard).	Vitrified brick masonry (per cubic yard).	Concrete masonry D (per cubic yard).	6-inch sub-drain pipe (per linear foot).
E. G. Gummel.....	\$1.45	\$16.00	\$23.00	\$7.50	\$0.30
The Warren F. Brenizer Co.....	.70	13.00	20.00	7.00	.30

## PROPOSALS FOR ROADWAY AND SIDEWALK CONSTRUCTION.

*Schedule of proposals for laying bituminous concrete pavement (per square yard).*

[Opened Thursday, August 12, 1909, at noon.]

The Cranford Paving Company..... \$0.70

*Schedule of proposals for laying cement sidewalks in the District of Columbia.*

[Opened Saturday, August 14, 1909, at 12 o'clock noon.]

Bidder.	Class A (per square yard).	Class B (per square yard).
Thos. R. Riley & Co.....	\$1.12	\$1.12
Jas. W. Bean.....	1.09	1.34
R. J. Beall Construction Co.....	1.04½	1.22½
The Cranford Paving Co.....	.94½	1.20
Lake Stone Co.....	.98	1.18

*Schedule of proposals for laying cement sidewalks in the District of Columbia.*

[Opened August 28, 1909, at 12 o'clock noon.]

Bidder.	Class A (per square yard).	Class B (per square yard).
Lake Stone Co.....	\$1.00	\$1.25

*Proposals for improving Thirteenth street NW. between Euclid street and Park road.*

[Opened October 15, 1909, at 12 o'clock noon.]

Bidder.	Setting 6 by 20 inch granite or bluestone curb (per linear foot).	Setting 8 by 8 inch granite curb (per linear foot).	Paving or repaving cobble or granite- block gut- ters (per square yard).	Paving vit- rified-block gutters on gravel base (per square yard).	Laying bi- tuminous macadam pavement (per square yard).
The Commonwealth Construction Co.....	\$0.30	\$0.40	\$0.40	\$0.62	\$0.96
Atlantic Bitulithic Co.....	.25	.32	.40	.85	1.28
Cranford Paving Co.....	.27	.35	.33	.65	.79½

*Schedule of proposals for grading Sixteenth street NW. and Pennsylvania avenue SE.*

[Opened April 9, 1910, at 2 o'clock p. m.]

Bidder.	Sixteenth street.		Grading Pennsyl- vania ave- nue (per cubic yard).
	Earth taken out (per cubic yard).	Earth fur- nished (per cubic yard).	
The Warren F. Brenizer Co.....			\$0.37
Holton Construction Co.....			.56
Harper & Voigt.....			.74
Warner Stutler.....			.45
I. H. Fisher.....			.38
Urban & Bradley.....			.68
Geo. Hyman.....	\$0.23½	\$0.13	.49

*Schedule of proposals, per cubic yard, for grading S street NW. between Second and Third streets.*

[Opened April 14, 1910, at 2 o'clock p. m.]

I. H. Fisher.....	\$0.27
Geo. Hyman.....	.64
Holton Construction Co.....	.69
R. E. Boisseau.....	.95
E. G. Gummel.....	.55
Urban & Bradley.....	.66

*Schedule of proposals for improving Thirteenth street NW. between Euclid street and Park road.*

[Opened April 26, 1910, at 2 o'clock p. m.]

Bidder.	Setting 6 by 20 inch granite or bluestone curb (per linear foot).	Setting 8 by 8 inch granite curb (per linear foot).	Paving or repaving cobble or granite-block gutters (per square yard).	Paving vitrified-block gutters on gravel base (per square yard).	Laying asphaltic macadam pavement (per square yard).
Cranford Paving Co .....	\$0.27	\$0.35	\$0.38	\$0.78	\$0.93
Atlantic Bitulithic Co. ....	.25	.32	.40	.85	1.21
Barber Asphalt Paving Co. ....	.30	.39	.40	.77	1.26

*Schedule of proposals for laying cement sidewalks in the District of Columbia.*

[Opened June 4, 1910, at 2 o'clock p. m. \$1,000 deposit required.]

Bidder.	Class A (per square yard).	Class B (per square yard).
Holton Construction Co. ....	\$0.92½	\$1.18
Rudolph S. Blome Co. ....	1.10	1.19
Lake Stone Co. ....	.99	1.20
The Warren F. Brenizer Co. ....	.97½	1.19
The Cranford Paving Co. ....	.99	1.23

## PROPOSAL FOR BRIDGE CONSTRUCTION.

*Schedule of proposals for construction of a concrete and rubble arch bridge on the line of Beach driveway, Rock Creek Park, above Military road.*

[Opened June 27, 1910, at 2 o'clock p. m.]

Bidder.	Bid A (construction of bridge except as noted in specification).	Bid B (construction of bridge as noted in specification).
Boyle-Robertson Construction Co .....	\$1,098	\$1,250
A. S. Baird .....	1,375	.....
E. G. Gummel .....	784	996
Lake Stone Co. ....	1,040	1,390
Peter F. Connolly Co. ....	1,590	1,790
Howard R. Bitting .....	1,059	.....
Hoge & Luebker Co. (Incorporated) .....	1,124	1,320

## PROPOSALS FOR MISCELLANEOUS PURPOSES.

*Schedule of proposals to furnish two motor trucks without bodies.*

[Opened July 10, 1909, at 12 o'clock noon.]

Cook & Stoddard .....	\$1,975
The "Autocar" Company .....	1,650
Knox Automobile Company .....	2,200
The Wilson Company (R. C. Wilson) .....	1,280
Rapid Motor Vehicle Company .....	1,360

*Schedule of proposals for work at Georgetown playgrounds.*

[Opened July 6, 1909, at 12 o'clock noon.]

Bidder.	Removing present brick building.	Concrete wall (per cubic yard).	Grading (per cubic yard).
Martin McNamara .....	\$117.00	\$4.85	\$0.26
The W. F. Brenizer Co. ....	300.00	6.00	.50
The J. R. Beall Construction Co. ....	300.00	5.95	.46
George Hyman .....	100.00	6.00	.40

*Schedule of proposals for removing the old Anacostia bridge across the Anacostia River at foot of Eleventh street SE., Washington, D. C.*

[Opened July 31, 1909, at 12 o'clock noon.]

Bidder.	Removal of super-structure (13 spans, including draw) and all masonry in piers 1 to 8, inclusive.		Bid B: For the removal of all timber piles (including platforms) supporting existing masonry of piers 1 to 8, inclusive (per pile).	Bid C: For the removal of riprap at piers Nos. 3 and 4 (per cubic yard).	Bid D: For the removal of all piles shown on plan between points A and B, including the platforms and other timbers attached thereto (these piles are outside of the masonry piers and their tops are exposed to view at low tide).
	Bid A 1.	Bid A 2.			
Ben Einstein .....	\$826.00				
John A. Hunter Co. ....		\$4,585.00	\$12.50	\$10.00	\$2.50
Penn Bridge Co. ....		6,344.00	4.50	3.00	2.90
U. G. Winston .....		3,443.00	12.80	2.50	2.50
Alonzo M. Lawson (Carmody Construction Co. check) .....		7,565.00	1.15	3.00	.90
Martin McNamara .....		2,800.00	5.00	2.00	3.00
Sanford & Brooks Co. ....		9,950.00	10.00	5.00	4.00
L. S. Collinson & Son .....		3,131.00	9.75	3.50	2.00
C. A. Mine and W. B. Bradley .....		6,200.00	7.50	1.50	2.50

*Schedule of proposals for constructing a toilet building and concrete swimming pool for the Georgetown playgrounds, square 1273, Thirty-fourth and Q streets NW.*

[Opened August 11, 1909, at 12 o'clock noon.]

Bidder.	Toilet building and swimming pool, complete.	Omitting swimming pool.	Time.
Wm. Rothwell .....			Days.
Boyle Robertson Construction Co. (Incorporated) .....	\$4,208	\$1,458	60
Burgess & Parsons .....	4,329	1,500	70
Camp & Skinker .....	3,750	1,162	90
R. J. Beall Construction Co. ....	3,997	1,100	45
	4,675	1,400	65

*Schedule of proposals for furnishing fire hydrants for fiscal year 1910.*

[Opened August 7, 1909, at 12 o'clock noon.]

Glamorgan Pipe and Foundry Company.....	\$34.20
The A. P. Smith Manufacturing Company.....	34.74

*Schedule of proposals for crushing stone at James Creek Canal.*

[Opened Saturday, August 14, 1909, at 12 o'clock noon.]

The Warren F. Brenizer Company.....	\$0.93
The Cranford Paving Company.....	.80

*Schedule of proposals for construction of wire fence, gates, and steps at site of Georgetown playgrounds, Thirty-third street and Volta place NW.*

[Opened August 27, 1909, at 12 o'clock noon.]

Bidder.	Price, complete.	Alternate.
Benj. B. Knell.....	\$1,324	
Fred S. Gichner.....	1,500	
W. A. Fry.....	1,085	\$950

*Schedule of proposals for curb and corporation cocks.*

[Opened September 11, 1909, at 12 o'clock noon.]

Bidder: H. Mueller Manufacturing Company.

4,000 $\frac{3}{4}$ -inch corporation cocks.....	each..	\$0.57 $\frac{1}{2}$
700 1-inch corporation cocks.....	do....	.85 $\frac{1}{2}$
100 1-inch corporation cocks, without eel guard or goose neck.....	do....	.60
100 $\frac{1}{2}$ -inch corporation cocks.....	do....	1.35
100 $\frac{1}{4}$ -inch corporation cocks.....	do....	2.18
4,000 $\frac{3}{4}$ -inch curb cocks for lead pipe.....	do....	.95
100 $\frac{1}{4}$ -inch curb cocks for lead pipe.....	do....	1.66

*Schedule of proposals for sodding terrace, Georgetown playgrounds, Thirty-fourth street and Volta place, Georgetown, D. C.*

[Opened October 5, 1909, at 12 o'clock noon.]

P. R. Pullman & Co.....	\$200.00
R. E. Boiseau.....	215.00
R. J. Beall Construction Company.....	194.44
J. B. Latimer.....	425.00

*Schedule of proposals for constructing a concrete retaining wall on the eastern line of the Georgetown playgrounds, Thirty-fourth street and Volta place, Georgetown, D. C.*

[Opened October 5, 1909, at 12 o'clock noon.]

P. R. Pullman & Co.....	\$430.00
R. J. Beall Construction Company.....	444.44
R. E. Boiseau.....	397.00
J. B. Latimer.....	393.00

*Schedule of proposals for hauling 500 loads, more or less, of top soil from the grounds along the speedway, west of Seventeenth street, to the Georgetown playgrounds, located at Thirty-fourth and Volta streets NW., Georgetown, D. C.*

[Opened October 16, 1909, at 12 o'clock noon.]

Bidder.	Price complete.	Size of load.
		Cubic yds.
R. J. Beall Construction Company.....	\$1.58	
Harper & Voigt.....	1.33	1 $\frac{1}{2}$
Stutler & Ready.....	1.50	2
Littlefield, Alvord & Co.....	.99	1

*Schedule of proposals for furnishing four lamp-posts for the Sixteenth Street Bridge across Piney Branch.*

[Opened November 6, 1909, at 12 o'clock noon.]

Bidder.	For furnishing four bronze lamp-posts complete.	For furnishing four cast-iron lamp-posts complete.
J. W. Fisk Iron Works.....	\$14,770	\$1,700
F. P. Smith Wire and Iron Works.....	8,198	2,798
Belmont Iron Works.....	13,750	1,448
The Snead & Co. Iron Works.....	15,047	4,092
The J. L. Mott Iron Works.....	2,705	472

*Schedule of proposals for furnishing water meters.*

[Opened November 22, at 12 o'clock noon.]

Bidder.	Price per meter.	Type of meter to be furnished.
Standard Water Meter Co.....	\$10.00	Current.
Neptune Meter Co.....	8.00	Trident disk.
Buffalo Meter Co.....	8.00	American.
Pittsburg Meter Co.....	8.00	Keystone.
Henry R. Worthington.....	6.50	Worthington Model "D."
Thomson Meter Co.....	8.00	Lambert.
Hersey Manufacturing Co.....	8.00	Hersey disk, model F. F.

*Schedule of proposals for razing buildings and grading site at Tenth and E streets SW.*

[Opened December 20, 1909, at 12 o'clock noon.]

Geo. Hyman agrees to grade site now occupied by premises 500, 502, 504, 506, 508, 510, 514, and 516 Tenth street and 948 and 950 E street and 948 and 950 Desmond alley, for the material in above premises, provided not more than 300 cubic yards of material is required for such grading.

*Schedule of proposals for furnishing water meters.*

[Opened December 22, 1909, at 12 o'clock noon.]

Bidder.	Price per meter.	Type of meter to be furnished.
Union Meter Co.....	\$7.15	King disk.
Henry R. Worthington.....	6.50	Worthington model "D."
Buffalo Meter Co.....	6.90	American disk.
Hersey Manufacturing Co.....	8.00	Model F. F.
National Meter Co.....	8.00	AAX, No. 9, Nash.
Thomson Meter Co., of New Jersey (contract).....	7.95	Lambert disk.
Pittsburg Meter Co.....	7.00	Keystone disk.
Neptune Meter Co.....	8.00	Trident disk.

*Schedule of proposals for doing plumbing work at 2502 G street NW.*

[Opened January 22, 1910, at 12 o'clock noon.]

Frank A. Kerr (no deposit received).....	\$20.00
Daniels & Kaldenbach.....	24.75

*Schedules of proposals for furnishing one five-passenger touring car, complete.*

[Opened March 14, 1910, at 2 o'clock p. m.]

Bidder.	Price complete.	Make of car.	Time of delivery.
			<i>Days.</i>
Overland Sales Co.....	1,719.00	Overland.....	15
The Motor Sales Co.....	2,069.00	Marion.....	15
	1,790.15	Moon, 30 horse-power.	30
Barnes & Hendrick.....	1,980.00	Pullman, 35 horse-power.	2
Cook & Stoddard Co.....	1,821.31	Cadillac, 30 horse-power.	1
Emerson & Orme.....	2,277.77	Apperson No. 430.	15
C. E. Myers.....	1,950.00	Elmore.....	30
Commercial Auto and Supply Co.....	1,500.00	Studebaker E. M. F., No. 30.	At once.
Carter Motor Car Corporation.....	1,539.00	Washington, 1910.	20

*Schedule of proposals for furnishing one five-passenger touring car complete.*

[Opened March 14, 1910, at 2 o'clock p. m.]

Bidder.	Price complete.	Make of car.	Time of delivery.
			<i>Days.</i>
The John R. Thomas Auto Co.....	\$1,500.00	Maxwell "E".....	10
The Autocar Co.....	1,800.00	Autocar.....	10
Buick Motor Co.....	1,995.35	Buick.....	30
Pope Automobile Co.....	1,800.00	Oakland "K".....	10
L. P. Dorsett Co.....	1,795.48	Kline Kar.....	30

*Schedule of proposals for furnishing the District of Columbia with 12-inch cast-iron water pipe.*

[Opened March 30, 1910, at 2 o'clock p. m.]

Glamorgan Pipe and Foundry Company.....	\$27.80
United States Cast-Iron Pipe and Foundry Company.....	26.88
Lynchburg Foundry Company.....	26.10

*Schedule of proposals for making sewer and water connections at 101, 103, 105, 107, and 109 Eighteenth street NE.*

[Opened April 13, 1910, at 2 o'clock p. m.]

Warner & Rittenhouse.....	\$900
William Rothwell & Son.....	1,118
Coberth, Hanes & White.....	820

*Schedule of proposals for making sewer and water connections at 4776 and 4778 Conduit road.*

[Opened April 13, 1910, at 2 o'clock p. m.]

Warner & Rittenhouse.....	\$380
Coberth, Hanes & White.....	309
William Rothwell & Son.....	377
Charles W. Balenger.....	320

*Schedule of proposals for making sewer and water connections at 602 Kennedy street NW.*

[Opened April 20, 1910, at 2 o'clock p. m. Deposit of \$50 required.]

E. F. Brooks (informal; no deposit).....	\$241.54
Cobert, Hanes & White.....	202.00
William Rothwell & Son.....	212.00
Warner & Rittenhouse.....	240.00



*Schedule of proposals for making sewer and water connections at 1 Clark place NW.*

[Opened April 20, 1910, at 2 o'clock p. m.]

Cobert, Hanes & White.....	\$89
William Rothwell.....	74
Warner & Rittenhouse.....	122

*Schedule of proposals for making sewer and water connections at 204 C street SW.*

[Opened April 20, 1910, at 2 o'clock p. m.]

William Rothwell & Son.....	\$168.00
Cobert, Hanes & White.....	179.00
E. F. Brooks (informal; no deposit).....	196.47
Warner & Rittenhouse.....	207.00

*Schedule of proposals for additional ground adjacent to the Ivy City school, approximately 32,000 square feet.*

[Opened May 27, 1910, at 2 o'clock p. m.]

Bidder.	Description of ground.	Price.
Jos. I. Weller.....	Lot 10, in square 4049 <sup>a</sup> .....	\$2,000.
Whitefield McKinlay.....	30, 39, and 40, square 4047, assessed to Messrs. Eugene Brooks, John A. Smallwood, and W. C. McNeill.	25 cents per square foot.
A. S. Caywood.....	Nos. 210 and 212 Capitol avenue, lots 17, 18, 19, and 20, block 7; size of lots 30 by 120 each, with frame house; containing 14,400 square feet.	\$3,000.
Wm. Duncan.....	Lot 43, square 4047, containing 3,600 square feet, with 5-room dwelling.	\$1,900.
J. L. Kolb.....	Lot 44 in square 4047, 3,600 square feet..	30 cents per square foot.
Benardini M. Rembold.....	Lots 1 and 2 of square 4047, containing 7,200 square feet.	40 cents per square foot.

<sup>a</sup> If additional ground is needed, can offer the adjoining lot.*Schedule of proposals for school site, west of the Soldiers' Home grounds, east of Sherman and New Hampshire avenues, south of Rock Creek Church road, and north of Girard street, approximately 40,000 square feet.*

[Opened May 27, 1910, at 2 o'clock p. m.]

Bidder.	Description of site.	Price.
Jos. I. Weller.....	All lot No. 13, of lot No. 1, square 3032, recorded in county book 36, page 3, fronting 195.4 on Warder street, by a depth on Princeton and Otis streets, of about 210 feet., containing in all about 40,950 square feet.	\$20,000.
Burr N. Edwards.....	All of lots 1, 10, 9, 8, 7, square 3033, corner Seventh (Warder) and Newton streets, fronting on Seventh 250 feet and 200 feet on Newton, 50,000 square feet; lot No. 6, same square, 10,000 feet.	\$20,000.
H. Rozier Dulaney.....	Lots 23 and 24 in square 2892.....	21 cents per square foot.
Patrick Shugrue, John H. Rupert, M. Frank Ruppert.	Lots No. 823 to and including the north 40 feet of lot No. 828, on the east side of Sherman avenue containing 50,000 square feet; also parts of lots 845 and 846.	50 cents per square foot.
Rittenour Bros.....	Lots 20, 21, 22, and 25, square 2892 <sup>a</sup> .....	\$7,640.

<sup>a</sup> See bid for normal school; both made on same paper.

*Schedule of proposals for normal-school site, north of O street, west of North Capitol street, and east of Seventh street and Georgia avenue.*

[Opened May 27, 1910, at 2 o'clock p. m.]

Bidder.	Description of site.	Price.
Jos. I. Weller.....	All of lots 7, 8, 9, 10, north 10 feet of lot 817, 818, 819, 820, and 821 in square 3060, formerly block No. 4, Howard University subdivision, containing 58,928 square feet (additional ground in lot No. 6 in same square.	\$40,000.
I. S. Lipscomb.....	The southeast corner of Fourth and W streets, fronting 150 feet on Fourth street, and running east on W street 350 feet, containing 52,500 square feet, with improvements.	\$39,900.
Burr N. Edwards.....	Lots 11, 10, 811, 8, 808, and 809, fronting 262.50 feet on Sixth street, 39,375 square feet.	\$34,825
R. H. J. Leibold.....	Lots No. 14, 15, 823, 824, 17, 818, and 5, square 3060, containing 34,750 square feet.	60 cents per square foot, \$20,-850.
M. Frank Ruppert.....	Lots 5 and 6, square 3068, fronting 150 feet on Bryant street, by a depth of 105 feet on Fourth street, nw., containing 15,750 square feet.	75 cents per square foot.
Rittenour Bros.....	Lots 22, 23, and 24 in square 3069, having a frontage on W street of 150 feet by a depth of 150 feet, and improvements.	50 cents per square foot.
Howard University a.....	Lot 800, square 3047, time limited to June 7, 1910, 12 midnight.	\$32,500.
	One-half block No. 3063, Howard University subdivision, fronting on the east side of Four-and-a-half street, running back to McMillan Park, and bounded on the south side by the proposed extension of Barry place.	55 cents per square foot.

a Informal, no deposit.

*Schedule of proposals for an engine-house site in the vicinity of Rock Creek Church road and Georgia avenue NW.*

[Opened May 27, 1910, at 2 o'clock p. m.]

Bidder.	Description of site.	Price.
L. S. Lipscomb.....	Lots 23 and 800 in square 2900, having a total frontage on Georgia avenue of 50 feet by a depth of 112 feet to an alley, containing 5,633 square feet.	\$4,224.
Rittenour Bros.....	(Lot 21, square 2841, if accepted by June 1. Lot 31, square 2893.....	55 cents per square foot. \$2,835.

*Schedule of proposals for additional ground in the immediate vicinity of the Orr School.*

[Opened May 27, 1910, at 2 o'clock p. m.]

Bidder.	Description of ground.	Price.
Jos. I. Weller.....	All lots 44, 45, 46, and 52, square 5561, adjoining the Orr School.	\$8,000. <sup>a</sup>

<sup>a</sup> The owner reserves the right of moving improvements, which if done, the price to be \$7,500.

*Schedule of proposals for repairs to gutters and downspout at 2125 I street NW.*

[Opened June 9, 1910, at 2 o'clock p. m. No deposit required.]

Coberth, Hanes & White Co.....	\$17.00
Maurice J. Coberth.....	22.50

*Schedule of proposals for naphtha street lighting in the District of Columbia.*

[Opened June 17, 1910, at 2 o'clock p. m.]

Bidder.	Price per lamp, one year.	Price per lamp, three years.
Union Lighting Co.....	\$29.00	\$29.00
American Street Lighting Co.....	22.80	22.80

*Schedule of proposals for the purchase of street sweepings from the hand-swept sections of the District of Columbia.*

[Opened June 20, 1910, at 2 o'clock p. m.]

	per ton..	Cents.
Louis Jefferson.....	21	
Bidgood Brothers.....	27½	

H. Clay Jones makes no formal proposal. Informal proposal attached herewith.

*Schedule of proposals for furnishing water meters to the District of Columbia.*

[Opened June 27, 1910, at 2 o'clock p. m.]

Bidder.	Price per meter.	Make.
Buffalo Meter Co.....	\$6.00	American disk.
Hersey Manufacturing Co.....	6.00	Hersey disk "F."
Thomson Meter Company of New Jersey.....	7.48	Lambert disk.
Pittsburg Meter Co.....	7.90	Type W. <sup>a</sup>
Neptune Meter Co.....	8.00	Disk trident.
Union Meter Co.....	7.10	King disk.
Henry R. Worthington.....	6.50	Mode D disk.
National Meter Co.....	8.00	AAX disk, Nash.

<sup>a</sup> For type W, \$5.90.*Schedule of proposals for proposed toilet accommodations at the Washington bathing beach.*

[Opened June 29, 1910, at 2 o'clock p. m. Deposit of \$50 required.]

Bidder.	Price complete.	Alternate.
Louis Conradis.....	\$559	\$534
Coberth, Hanes & White Co.....	492	—22
William Rothwell.....	597	—40

## STATEMENT OF CONTRACTS.

*Contracts entered into by the District of Columbia during the fiscal year 1909-10.*

## 1. HIGHWAY IMPROVEMENTS.

No.	Date.	Name of contractor.	Nature of contract.
	1909.		
4391	July 2	E. G. Gummel.....	Grading and improving suburban streets.
4398	July 9	Harper & Voigt.....	Grading M street ne., Bladensburg road to Twenty-fourth street.
4401	July 12	Thos. R. Riley & Co.....	Grading T street ne., Lincoln road to Second street.
4408	July 20	Cranford Paving Co.....	Paving New Jersey Avenue Bridge over Virginia avenue.
4420	July 23	George Hyman.....	Grading Upton street east of Pierce Mill road.
4493	Aug. 26	Cranford Paving Co.....	Lay cement sidewalks.
4497	Aug. 27	do.....	Pave School street, Irving to Lamont.
4501	Sept. 3	Lake Stone Co.....	Laying cement sidewalks.
4511	Sept. 29	Penn Bridge Co.....	Steel for bridge 27.
4560	Apr. 13	George Hyman.....	Filling approaches to Piney Branch Bridge.
4562	Apr. 15	Warren F. Brenizer Co.....	Grading Pennsylvania avenue se.

*Contracts entered into by the District of Columbia during the fiscal year 1909-10—Con.*

1. HIGHWAY IMPROVEMENTS—Continued.

No.	Date.	Name of contractor.	Nature of contract.
4504	1909. Apr. 27	E. G. Gummel.....	Grading S street nw., between Second and Third streets.
4506	May 5	Cranford Paving Co.....	Improving Thirteenth street nw., between Euclid street and Park road.
4606	June 22	Warren F. Brenizer Co.....	Lay cement sidewalks.
4612	June 29	E. G. Gummel.....	Bridge in Rock Creek Park.

2. SEWER CONSTRUCTION.

4503	Sept. 14	R. J. Beall Construction Co. ....	Sewers in Farragut street nw., between Arkansas avenue and Thirteenth street; in Thirteenth street nw., between Farragut and Hamilton streets; in Hamilton street, between Thirteenth and Fourteenth streets; in Fourteenth street, between Hamilton street and Colorado avenue.
4514	Oct. 9	Jas. A. Coyle.....	Sewers in Twenty-first street ne., between A and D streets.
4515	Oct. 6	E. G. Gummel.....	Sewer through Ross property, between M and P streets ne.
4517	Oct. 12	Warren F. Brenizer Co.....	Sewers in Piney Branch valley crossing Sixteenth street.
4518	do.....	do.....	Sewer along line of old Anacostia Bridge.
4523	Dec. 15	E. G. Gummel.....	Sewers in Douglas street ne., between Queens Chapel road and Twenty-second street; in Twenty-second street, between Douglas and Channing streets; in Channing street, between Twenty-second and Twenty-fourth streets; in Twenty-fourth street, between Channing and Douglas streets; in Douglas street, between Twenty-fourth street and Baltimore and Ohio R. R.; in Evarts street, between Mills avenue and Queens Chapel road; in Girard street ne., between Twenty-sixth and Vista streets; in Vista street, between Girard street and South Dakota avenue; in South Dakota avenue, between Vista and Irving streets; in Twenty-sixth street ne., between Irving street and South Dakota avenue; in Woodridge street ne., between Twenty-second and Twenty-fourth streets; in Mills avenue ne., between Franklin and Irving streets; in Hamilton street ne., between Twenty-fifth and Twenty-sixth streets.
4553	Apr. 8	Geo. Hyman.....	Sewers in Douglas street ne., between Twenty-sixth and Twenty-eighth streets; in Twenty-eighth street, between Douglas and Evarts streets; in Evarts street, between Twenty-eighth street and Bladensburg road; in Eighteenth street ne., between Jackson and Lawrence streets; in Twentieth street, between Jackson and Lawrence streets.
4556	Apr. 7	Warren F. Brenizer Co.....	Sewer in Buchanan street, between Georgia and Arkansas avenues; in Iowa avenue, between Georgia avenue and Buchanan street; in Allison street, between Georgia and Iowa avenues; in Webster street, between Iowa and Georgia avenues; in alley in square 2817.
4557	do.....	do.....	Sewer in Nebraska avenue, between Connecticut avenue and Pleasant drive.
4583	June 4	do.....	Sewer in Grant road between Nourse road and Wisconsin avenue.
4584	June 6	do.....	Sewer in Tunlaw road, between Thirty-seventh street and Snyder's lane; in New Mexico avenue, between Arizona and Nebraska avenues.
4585	do.....	do.....	Sewer in Colorado avenue, between Kennedy and Montague streets; in Longfellow street, between Colorado avenue and Fourteenth street; in Fourteenth street, between Longfellow and Madison streets; in Piney Branch road, between Montague street and Georgia avenue; also in Farragut street nw., between Thirteenth and Fourteenth streets; in Gallatin street, between Georgia avenue and Fourteenth street.
4586	June 8	George Hyman.....	Sewer in Connecticut avenue, between Ordway and Porter streets; in Porter street, between Connecticut avenue and Reno road.
4599	June 25	Warren F. Brenizer Co.....	Sewer in E street nw., between Twenty-fifth and Twenty-sixth streets; in F street sw., Third to Four-and-a-half streets; in A street ne., Sixth to Seventh streets; in Second street ne., B to C streets; in alley, square 400; in C street nw., between Ninth and Tenth streets; in alley, square 395; in I street ne., Tenth to Eleventh streets; in Twelfth street nw., B to C streets.
4611	June 29	John H. Miller.....	Dredge at outfall sewer outlet, foot of Second street.

Contracts entered into by the District of Columbia during the fiscal year 1909-10—Con.

### 3. MATERIAL AND HAULING.

No.	Date.	Name of contractor.	Nature of contract.
	1909.		
4393	July 1	Washington Asphalt Block and Tile Co.	Furnishing 400,000 asphalt block.
4396	July 7	Geo. W. Knox Express Co.	Hauling.
4397	July 12	Lynchburg Foundry Co.	Miscellaneous castings.
4400	do.	Stuart R. Carr & Co.	Do.
4403	July 10	Glamorgan Pipe and Foundry Co.	Cast-iron pipe.
4406	July 27	George B. Mullin	Hauling broken stone.
4407	July 1	Frederick Brick Works	Furnishing red sewer brick.
4425	July 20	United States Cast Iron Pipe and Foundry Co.	Cast-iron water pipe.
4432	July 28	L. E. Smoot	Sand and gravel.
4471	Aug. 16	Fred J. White	Miscellaneous castings.
4477	Aug. 19	Glamorgan Pipe and Foundry Co.	Fire hydrants.
4507	Sept. 28	American Sewer Pipe Co.	Terra-cotta sewer pipe.
4513	do.	H. Mueller Manufacturing Co.	Curb and corporation cocks.
4523	Nov. 19	Belmont Iron Works	Cast-iron lamp-posts.
4524	Nov. 24	Potomac Dredging Co.	Sand and gravel.
4525	Nov. 26	Hersey Manufacturing Co.	Water meters.
4530	Dec. 27	Thomson Meter Co.	Do.
	1910.		
4531	Jan. 13	Barrett Manufacturing Co.	Coal-tar paving pitch.
4543	Feb. 19	Washington Asphalt Block and Tile Co.	Asphalt paving blocks.
4544	Feb. 28	James M. Porter	Sewer brick.
4552	Apr. 4	National Mortar Co.	Old Dominion Portland cement.
4554	Apr. 6	Columbia Granite and Dredging Corporation.	Sand and gravel.
4555	do.	American Sewer Pipe Co.	Sewer pipe.
4558	Apr. 11	Lynchburg Foundry Co.	Cast-iron water pipe.
4561	Apr. 6	Mack Manufacturing Co.	Sewer brick.
4565	Apr. 28	Littlefield, Alvord & Co.	Hauling asphalt block to the Union Station plaza.
4567	May 2	Standard Lime and Stone Co.	Quarry stone at the District quarry at Dickerson, Md.
4587	June 8	S. Dana Lincoln	Portland cement.
4588	June 9	George B. Mullin	Hauling broken stone.
4589	do.	C. F. Thomas & Son	Furnishing sewer brick.
4591	June 8	Washington Asphalt Block and Tile Co.	Furnishing asphalt block.
4592	June 11	Potomac Sand and Gravel Co.	Furnishing sand and gravel.
4594	June 15	Potomac River Clay Works	Terra-cotta sewer pipe.
4600	June 10	C. P. Mayer Brick Co.	Vitrified paving brick.
4601	do.	American Sewer Pipe Co.	Terra-cotta sewer pipe.
4602	June 9	Fred J. White	Miscellaneous castings.
4603	June 16	North Carolina Granite Corporation.	Granite curb.
4607	June 22	James M. Porter	Vitrified sewer brick.

### 4. BUILDING AND BUILDING REPAIRS.

	1909.		
4399	July 12	James M. Dunn	Constructing Anacostia police station.
4402	July 10	Hutchinson & McCarthy	Remodel plumbing in Greenleaf school.
4410	July 20	James M. Dunn	Constructing truck house, K street sw., between Third and Four-and-a-half streets.
4411	do.	Wm. Rothwell & Son	Remodel plumbing work in Payne School.
4413	July 22	S. S. Shedd & Bro. Co.	Remodel plumbing in Bell School.
4414	do.	do.	Remodel plumbing in Buchanan School.
4415	do.	do.	Remodel plumbing in Wallach School.
4416	do.	do.	Remodel plumbing in Hayes School.
4417	July 21	do.	Remodel plumbing in Douglas School.
4426	July 28	Samuel A. Gregory	Repairing heating apparatus in schools.
4465	Aug. 5	Alfred C. Courtney	Electrical work at Central High School.
4473	Aug. 12	G. & W. Manufacturing Co.	Boilers for Dennison School.
4489	Aug. 18	Carroll Electric Co.	Lighting system, Western Market.
4498	Aug. 30	Jos. H. Gibbons	Plumbing in Mott School.
4502	Sept. 10	Fries, Beall & Sharp Co.	Registers for school buildings.
4505	Sept. 14	Keystone Furnace Co.	Boiler for Central High School.
4509	Sept. 25	Dowd Bros.	Boiler for Industrial Home School.
4519	Oct. 26	Robert T. Humphrey	Construct Strong John Thompson School.
4521	Nov. 11	Ducker Co.	Portable school buildings.
4522	Nov. 13	Edward Darby & Sons Co.	Lockers in Eastern High School.
	1910.		
4532	Jan. 22	Wm. Rothwell & Son	Repair work at Business High School.
4533	Jan. 21	Crown Metal Construction Co.	Book closets in Petworth School.
4534	Jan. 27	Jos. H. Gibbons	Remodel entrance to Business High School.

Contracts entered into by the District of Columbia during the fiscal year 1909-10—Con.

## BUILDING AND BUILDING REPAIRS—Continued.

No.	Date.	Name of contractor.	Nature of contract.
	1910.		
4535	Jan. 31	James M. Dunn.....	Construct addition to Monroe School.
4536	Feb. 2	Boyle-Robertson Construction Co.	Public-convenience station at Ninth and K streets nw.
4537	...do....	...do....	Public-convenience station at Dupont Circle.
4538	Feb. 9	George E. Wyne.....	Construct engine house No. 23.
4540	Feb. 18	Thomas H. Melton.....	Construct engine house No. 2.
4541	...do....	...do....	Construct addition to Western High School.
4542	Feb. 21	Thomas & Smith (Incorporated)	Air washers for District building.
4545	Mar. 2	George E. Wyne.....	Construct John Eaton School.
4546	Mar. 4	Wm. H. McCray.....	Construct school building No. 159.
4550	Mar. 19	Howison & Skinker.....	Construct additions to Chevy Chase School.
4559	Apr. 8	S. S. Shedd & Bro. Co.....	Plumbing at Langdon School.
4568	May 11	Burgess & Parsons.....	Constructing school building No. 161.
4569	...do....	...do....	Constructing addition to Bennings School.
4570	...do....	...do....	Constructing addition to Lovejoy School.
4571	May 18	Wm. Rothwell & Son.....	Plumbing changes in Reservoir School.
4577	May 24	Biggs Heating Co.....	Installing temperature-regulating system in the Public Library.
4579	May 23	S. S. Shedd & Bro. Co.....	Plumbing changes in Chevy Chase School.
4580	May 31	Kluckhohn Bros.....	Electric-wiring system in engine house No. 2.
4597	June 14	Warner & Rittenhouse.....	Plumbing changes in Armstrong Manual Training School.
4598	...do....	R. J. Beall Construction Co.....	Constructing pools at bathing beach.
4599	June 16	John H. Hinrichs.....	Painting walls in District building.
4604	June 21	Jos. H. Gibbons.....	Plumbing work in Business High School extension.
4608	June 24	James A. Coyle.....	Excavate engine-house site, Twenty-eighth street and Pennsylvania avenue se.
4615	June 29	Coberth, Hanes & White Co....	Plumbing in Toner School.
4616	...do....	...do....	Plumbing in Bruce School.

## 5. GENERAL SUPPLIES.

	1909.		
4409	July 15	American Ice Co.....	Ice.
4421	July 26	Washington Tobacco Co.....	Tobacco.
4422	July 24	W. M. Galt & Co.....	Flour and forage.
4424	...do....	R. Carter Ballantyne.....	Stationery.
4429	July 29	R. P. Andrews Paper Co.....	Do.
4430	July 31	W. A. H. Church.....	Lumber.
4433	...do....	Clarence E. Gould.....	Typewriter ribbons.
4435	...do....	Somerset R. Waters.....	Groceries.
4436	July 29	James B. Lambie (Incorporated)	Hardware, etc.
4437	July 24	W. B. Moses & Sons (Incorporated).	Furniture.
4438	July 31	Z. D. Gilman.....	Drugs.
4439	Aug. 3	Samuel D. Houck.....	Saddlery.
4441	Aug. 2	Corby Bros.....	Bread.
4442	July 28	Cuyler & Mohler.....	Hardware, etc.
4443	July 27	Mather-Lamm Paper Co.....	Stationery.
4444	...do....	Eagle Pencil Co.....	Do.
4445	July 31	Wm. Hahn & Co.....	Boots and shoes.
4446	Aug. 4	Thomas W. Smith.....	Lumber.
4447	July 31	Wm. J. C. Dulaney.....	School books, stationery, etc.
4448	Aug. 3	Mackall Bros.....	Drugs.
4449	Aug. 5	E. J. Murphy Co.....	Glass, paints, oils, etc.
4450	July 31	Lansburgh & Bro.....	Dry goods.
4451	July 26	Carroll Electric Co.....	Electrical supplies.
4452	Aug. 5	Washington Rubber Co.....	Rubber goods.
4453	Aug. 2	J. Ross Collins.....	Jute sacks.
4454	Aug. 6	Louis Hartig.....	Hardware.
4455	Aug. 5	Barber & Ross.....	Hardware, etc.
4456	Aug. 4	Frank Hume (Incorporated)....	Groceries.
4457	Aug. 2	Harry Kaufman Co.....	Dry goods.
4458	Aug. 9	Thos. Somerville Co.....	Plumbing material.
4459	July 26	Swift & Co.....	Meats.
4460	Aug. 7	Carnahan Printing Co.....	Printing.
4461	July 30	American Flag Co.....	Flags.
4462	July 20	Blum Bros.....	Furniture, hardware, etc.
4463	Aug. 11	Geo. E. Howard.....	Printing.
4464	Aug. 10	H. G. & J. E. Wagner.....	Clocks.
4466	...do....	J. Edw. Chapman.....	Fuel.
4467	Aug. 12	John P. Agnew & Co.....	Do.
4468	Aug. 5	Wilkins-Sheiry Co.....	Printing.
4469	Aug. 2	Chas. G. Stott.....	Stationery.
4470	Aug. 13	Wm. L. Swayze.....	Do.
4472	Aug. 10	W. T. Galliher & Bro.....	Lumber.
4475	Aug. 17	W. & J. Sloane.....	Carpets and matting.
4476	Aug. 18	R. P. Clarke.....	Printing.
4478	...do....	Prang Educational Co.....	Paints, etc.

*Contracts entered into by the District of Columbia during the fiscal year 1909-10—Con.*

No.	Date.	Name of contractor.	Nature of contract.
	1909.		
4479	Aug. 19	National Electrical Supply Co..	Electrical supplies.
4480	Aug. 17	W. B. Moses & Sons.....	School-room furniture.
4481	Aug. 19	Geo. F. Muth & Co.....	Paints, oils, etc.
4482	Aug. 17	Christopher Sower Co.....	School books.
4483	Aug. 20	Lutz & Co.....	Furniture, hardware, etc.
4484	...do....	Robert Murphy.....	Fuel.
4485	Aug. 16	Rudolph & West Co.....	Hardware.
4486	Aug. 17	D. Appleton & Co.....	School books.
4487	Aug. 18	R. F. Clarke Co.....	Stationery, etc.
4488	Aug. 20	R. Carter Ballantyne.....	Stationery.
4490	Aug. 24	Hugh Reilly.....	Paints, oils, etc.
4491	Aug. 25	Hoge & McDowell Co.....	Forage.
4492	Aug. 23	Jas. F. Oyster.....	Butter and cheese.
4494	Aug. 30	Jos. A. Whitfield.....	Meats.
4495	July 30	Globe Printing Co.....	Printing.
4496	Aug. 30	Martin Wiegand.....	Furniture, lumber, etc.
4499	Aug. 20	Standard Oil Co.....	Gasoline and oils.
4500	Sept. 2	Blum Bros.....	Window shades.
4504	Sept. 14	Milton Bradley Co.....	Stationery and kindergarten supplies.
4512	Oct. 4	Ward W. Griffith.....	Fuel.
4516	Oct. 9	Johnson Bros.....	Do.
4539	Feb. 14	Eureka Fire Hose Manufactur- ing Co.	Fire hose.
4593	June 10	Leonard P. Steuart.....	Ice.
4595	June 11	American Ice Co.....	Do.
4605	June 22	Wm. D. Jarvis & Son.....	Fish.

#### 6. MISCELLANEOUS.

	1909.		
4394	July 6	Yale Laundry.....	Laundry work.
4395	July 8	Cook & Stoddard Co.....	Automobile.
4412	July 20	Martin McNamara.....	Remove buildings at Georgetown playgrounds.
4418	July 22	Cook & Stoddard Co.....	Automobile patrol wagon.
4423	July 23	Jos. Kaufman & Son.....	Horses for fire department.
4427	July 26	Gilbert D. Emerson.....	Binding for public library.
4428	July 28	Columbia Pump and Well Co..	Drilling deep wells at suburban schools.
4431	July 30	Cook & Stoddard Co.....	Automobile trucks.
4434	July 27	American La France Fire En- gine Co.	Steam fire engine.
4474	Aug. 18	Martin McNamara.....	Removing old Anacostia Bridge.
4506	Sept. 20	Combination Ladder Co.....	Rebuilding fire engine.
4508	Sept. 22	A. Philmister Proctor.....	Model of tiger to adorn new Piney Branch Bridge.
4510	Sept. 21	Buick Motor Co.....	Automobile delivery truck.
4520	Oct. 30	Potomac Electric Power Co....	Electric street lighting.
4526	Nov. 24	Archibald Wheel Co.....	Repair wheels for fire department apparatus.
4527	Dec. 9	E. F. Droop & Sons Co.....	Pianos for public schools.
4528	Dec. 14	Hugo Worch.....	Do.
4547	Mar. 3	W. B. Moses & Sons.....	Chairs for Garfield School.
4548	Mar. 10	National Electrical Supply Co..	Gas engine and pump.
4549	Mar. 12	Anchor Post Iron Works.....	Wire fencing for Reno reservoir.
4551	Mar. 26	United States Fire Apparatus Co	Chemical engine and hose wagon.
4563	Apr. 25	Kanawha Chemical Engine Manufacturing Co.	Chemical fire extinguishing apparatus in the District Building.
4572	May 26	Barnes & Hendrick.....	Touring car for Engineer Commissioner.
4573	May 21	Michael R. Ready.....	Collecting miscellaneous refuse throughout the District of Columbia.
4574	May 19	James W. Bean.....	Collecting ashes throughout the District of Columbia.
4575	May 23	Warner Stutler.....	Collecting night soil throughout the District of Co- lumbia.
4576	...do....	...do.....	Collecting refuse from municipal buildings.
4578	May 25	Robert E. Mann.....	Collecting dead animals throughout the District of Columbia.
4581	June 3	Washington Fertilizer Co.....	Collecting garbage throughout the District of Columbia.
4582	May 31	United States Fire Apparatus Co	Chemical engine and hose wagon.
4590	June 9	Tolman Laundry.....	Laundry work.
4596	...do....	Fowler Manufacturing Co.....	Do.
4609	June 24	Gilbert D. Emerson.....	Binding for public library.
4613	June 30	Bidgood Bros.....	Purchase street sweepings.
4614	...do....	F. W. Schrumpf Co. (Incorpor- ated).	Purchase waste paper.

## REPORT OF THE WHARF COMMITTEE.

WASHINGTON, D. C., *September 9, 1910.*

SIR: The wharf committee has the honor to submit the following report of its operations during the fiscal year ended June 30, 1910:

The personnel of the committee was changed during the year by the death of its chairman, Lieut. J. R. Sutton, harbor master, and the resignation of W. J. Douglas, engineer of bridges. The committee was reorganized by order of the Commissioners dated June 23, 1910, and now consists of Daniel E. Garges, chief clerk of the engineer department; T. J. C. Baily, jr., engineer of bridges; and Lieut. Russell Dean, harbor master.

Accompanying the report is a list of the wharf property now under lease on the Potomac River, Anacostia River, or Eastern Branch, and James Creek Canal. The total amount received annually from rents is \$16,941.35.

## AVAILABLE WATER FRONTAGE.

The actual water frontage in the District of Columbia, with the exception of canals, devoted to commerce is about 2 miles. The total available water frontage, exclusive of canals, which is practicable of commercial development, is about 18 miles; this length, however, includes the frontage set apart for parks and purposes of the United States—about 8 miles.

## WHARVES ALONG THE WASHINGTON CHANNEL.

The most important wharf property under lease is that along the Washington channel. This is a total frontage on the city side of 9,275 linear feet, of which 4,675 feet between the arsenal and N street south is under the jurisdiction of the United States, and 4,600 feet between N street south and Fourteenth street is under the jurisdiction of the Commissioners and under lease for commercial purposes.

The longest term lease of wharf property along this frontage expires on May 1, 1913, and there is no privilege of renewal after that date.

This frontage is the most important in the District of Columbia. It is here that all of the excursion and river traffic and most of the commercial wharves are located. The harbor precinct, the District morgue, the wharf of the fire boat, and a District property yard and wharf are also located here. Some improvements have been made in the wharves and the structures thereon by the lessees, and generally the wharf property is in fair condition, with the exception of the structures on the fish wharf, located at the foot of Eleventh street. On this wharf are located a large number of frame structures, which are not in a proper sanitary condition by reason of the absence of sewer and water facilities. At the expiration of the term of the original lease for this wharf an effort was made to require the lessee to place the wharf in good condition, and upon his refusal to do so he was informed that no further lease would be given him, and notice was served on him to vacate the property. He refused to do so, and the matter is now in litigation. The rental which was received for this wharf was \$1,200 per annum, and no rental has been paid since March 15, 1908, the date of the expiration of the original lease.

It is hoped that the pending legal proceedings will be terminated during the present year and the conditions at this wharf improved. The necessity for such improvement is very great, as this wharf receives all the fish, oysters, and produce which comes to Washington by water.

## WHARVES ALONG THE ANACOSTIA RIVER.

This frontage is largely undeveloped, owing to the uncertainty regarding the ownership of abutting land and riparian rights.

A report was made to the last Congress regarding the ownership of the land and riparian rights along this river for the purpose of the improvement of the Anacostia Flats. This report, however, failed to go into the question of ownership and riparian rights where the city of Washington abuts upon the river. This question was left for future investigation by the special counsel, Hugh T. Taggart, who made the report, and it is also being investigated by the commission to investigate the title of the United States to land in the District of Columbia. Some of the old maps of the city of Washington show a Water street extending along this frontage similar to that along the Washington channel, and if after investigation it should be proved that this is the case, the United States would own the riparian rights, and this frontage of the city would become a valuable asset. Some leases have already been made for that portion of the frontage where the streets of the city extend to the water. Two leases have been made for water frontage on the opposite side of the river near the Pennsylvania Avenue Bridge.



## JAMES CREEK CANAL.

This canal formerly extended from G street to the Anacostia River. It has been filled from G street practically to N street. From N street to P street, a distance of about 1,000 feet, the frontage on both sides of the canal is under lease. From P street to the outlet of the canal, a distance of about 3,000 feet, it extends along the grounds of the War College and Engineer School. The business carried on by the lessees of the portion between N and P streets, consists in the handling of lumber, wood, and building materials. The canal is quite shallow, owing to the fact that it is not dredged, and there is practically no flow of water in it. No difficulty, however, is experienced in leasing the adjoining ground.

The wharf committee desires to submit for the consideration of the Commissioners the question as to whether it would be proper to abandon and fill the entire canal from N street to the Potomac River or whether it should be kept open for commercial use. The frontage under lease is but a small proportion of the total length of the canal, and, due to the lack of circulation, the water is stagnant and possibly unhealthful. If the canal is filled, a broad highway could be constructed over it, extending from G and South Capitol streets to the Potomac River, affording a boulevard through this section of the city and giving more convenient access to the War College and the Engineer School. Besides this, it would also do away with insanitary conditions adjacent to the War College and Engineer School, which exist by reason of this canal. On the other hand, there is at present a dearth of available water frontage for commercial purposes, and until the question of ownership and riparian rights along the Anacostia River is settled there will be no room for increasing the available water frontage, so that if the present lessees along this canal are required to vacate, there would be no place for them to go for similar wharfage facilities. Either the canal should be abandoned or it should be dredged and retaining walls built along the sides so as to improve the present conditions.

## WHARVES ALONG THE GEORGETOWN CHANNEL.

All of the wharf property along this channel is under private control with the exception of the foot of streets. The Cranford Paving Company leases the foot of Thirty-third street, and the foot of Thirtieth street has been used as a depot for unloading wood, wharfage being charged for the service under the direction of the superintendent of weights and measures. A steam railroad has recently been extended along Water street, with a spur line down Thirty-first street to the river, and it is believed that this frontage will become much more commercially valuable by reason of this improvement.

## IMPROVEMENT OF THE HARBOR FRONT.

The wharf committee again calls attention to its report on the improvement of the water front which was forwarded to Congress by the Commissioners May 23, 1908, and printed as Senate Document No. 519, Sixtieth Congress, first session. The estimated cost of the work of improvement outlined in this report was about \$3,000,000. This would be a large expenditure, but your committee believes that it would be justifiable in order to make the water frontage of the city of Washington a credit to the city. Under existing conditions it is far from so. It is possible that this plan might be modified so as to reduce the cost without interfering with the proper development of this frontage, but your committee believes that steps should be taken at an early date to secure some appropriation to begin improvements.

No extensive improvements can be expected by the present lessees, owing to the short time for which their leases run, and it is not believed desirable to enter into long-term leases under existing conditions. If money were appropriated to rebuild the entire frontage along the Washington channel, it is believed that a proper return on the investment could be received in the way of rentals, and besides the appearance of this section would be much improved.

DANIEL E. GARGES,  
T. J. C. BAILY, Jr.  
RUSSELL DEAN,  
*Wharf Committee.*

Maj. WILLIAM V. JUDSON,  
*Engineer Commissioner, District of Columbia.*

*List of wharf property under lease June 30, 1910.*

## POTOMAC RIVER FRONT.

Name of lessee.	Location.	Expires—	Water frontage.	Area.	Rental per year.
American Ice Co.....	Section 2, structures 54 to 58, 60 to 67, and 78 to 88.	Mar. 15, 1913	<i>Feet.</i> 496	<i>Sq. feet.</i> 102,100	\$2,500.00
Conrad F. Bennett.....	Section 2, structures 89 to 97.....	.....do.....	54	7,500	200.00
Cranford Paving Co.....	Foot of Thirty-first street.....	Feb. 1, 1918	33		240.00
Capital Yacht Club.....	Foot of Ninth street sw., between structures 39 and 41.	July 1, 1911	24	2,080	75.00
L. A. Clarke & Son.....	Section 2, structures 68 to 77, inclusive, and 70 1/2.	May 1, 1913	280	45,800	a 750.00
Church & Wimsatt.....	Section 2, structures 34 and 35.....	Mar. 15, 1913	80	18,000	720.00
Colonial Beach Co.....	Section 1, structures 31 to 37, inclusive.	.....do.....	132	8,000	300.00
Edward A. Cumberland	Section 2, structures 39 and 40.....	Mar. 15, 1911	40	2,400	70.00
The J. Maury Dove Co.	Foot of G street.....	Sept. 1, 1911	100		120.00
G. W. Forsberg.....	Section 2, structures 22 to 33, except 24 and 118, 119, and 120.	Mar. 15, 1913	156	18,000	735.00
Edward J. Gardner.....	Section 3, structure 21.....	Oct. 1, 1910	20	1,600	75.00
Independent Steamboat and Barge Co.	Section 1, structures 26 to 30.....	Oct. 1, 1912	120	7,000	300.00
J. Harrison Johnson.....	Section 3, structures 12 to 20.....	Mar. 15, 1913	168	38,000	750.00
Johnson & Wimsatt.....	Section 3, structures 5 to 11.....	.....do.....	190	43,500	900.00
John Miller.....	Section 3, structures 24 to 27.....	.....do.....	200	26,600	b 300.00
Mount Vernon and Marshall Hall Steamboat Co.	Section 1, structures 59, 62, 63, and 64.	.....do.....	125	10,000	600.00
William Neitzey.....	Section 3, structure 23.....	Mar. 15, 1911	18	1,440	60.00
Nicholson & Freeman.....	Section 2, structures 36, 37, and 38.....	Mar. 15, 1912	44	3,320	100.00
Norfolk and Washington Steamboat Co.	Section 1, structures 41 to 49 and 57 to 60.	Mar. 15, 1913	220	20,300	1,200.00
Do.....	Section 1, structures 60 and 65 to 72.....	Jan. 1, 1912	190	44,000	1,500.00
Potomac Gunning and Fishing Club.	Section 2, structures 42 and 43.....	Mar. 15, 1911	18	1,000	60.00
Potomac and Chesapeake Steamboat Co.	Section 2, structures 11, 12, 14, 15, 16, 17, 17 1/2, 18, 20, 21, 13, and 19.	Mar. 15, 1913	198	35,600	810.00
William A. Ragan.....	Section 3, structure 22.....	Mar. 15, 1911	45	2,600	100.00
Stephenson Bros.....	Section 2, structures 1 to 10, inclusive.	Feb. 1, 1912	300	59,900	900.00
Geo. A. Tasker.....	Section 2, structure 41 and south of 41.	Apr. 15, 1911	18	1,148	60.00
White Oak Coal Co.....	Section 3, structure at foot of Thirteen-and-a-half street, opposite square southeast of 267.	Mar. 15, 1912	200	35,000	400.00
Fish wharf, formerly leased to W. W. Riley, now in litigation.	Section 2, structures 98 to 129, inclusive; section 3, structures 1 to 4, inclusive.	.....	496	117,800	.....
District of Columbia, sand wharf.	Section 2, structures 43 to 53, inclusive.	.....	147	24,500	.....
District of Columbia, harbor master's wharf.	Section 1, structure 38.....	.....	.....	.....	.....
Total.....	.....	.....	.....	.....	14,873.00

## ANACOSTIA RIVER (EASTERN BRANCH).

Harry D. Bailey.....	North side, just west of new Anacostia Bridge.	Oct. 18, 1910	35	.....	\$30.00
Do.....	Space along abutment of old Anacostia bridge.	.....do.....	46	.....	50.60
C. C. Carlsen.....	Water front, between building lines of Fourth street SE.	June 30, 1911	50	.....	50.00
Chas. L. Gummel.....	Water front, between building lines of N street SE.	(c)	.....	.....	67.50
Thomas Keely.....	Water frontage on south bank of river of alley adjacent to lot 3, block 7, Twining City.	Aug. 1, 1911	10	.....	10.00
Samuel E. Masson.....	Water frontage on south bank of river, foot of Naylor street SE.....	Apr. 14, 1911	60	.....	10.00
Capt. Henry Raum.....	Foot of First street SE.....	(c)	60	.....	60.00
District of Columbia, sewer division.	Opposite lot 1, square south of square 744.	.....	132.2	.....	.....
Thomas W. Smith.....	Square south of square 744.....	Nov. 5, 1914	132.2	.....	132.00
Miss Kate Tole.....	West side old Anacostia bridge.....	June 30, 1911	48	.....	48.00
United States, Superintendent Capitol Building and Grounds.	Foot of First street SE., opposite square south of square 744.	.....	40	.....	.....
William E. Wood.....	Foot of Eleventh street SE., west of abutment of old Anacostia bridge.	June 30, 1911	45	.....	45.00
Total.....	.....	.....	.....	.....	503.10

a Also \$750 in improvements.

b Also \$300 in improvements.

c Monthly lease.

*List of wharf property under lease June 30, 1910—Continued.*

## JAMES CREEK CANAL.

Name of lessee.	Location.	Expires—	Water frontage.	Area.	Rental per year.
L. A. Clarke & Son.....	Parcels 5-7 and 11.....	June 30, 1911	277	.....	\$207.75
Cohen Bros.....	Part parcel 8.....	do.....	127	.....	158.75
Eugene Hall.....	Parcel 27.....	Dec. 1, 1910	15	.....	7.50
Do.....	Parcel 28.....	June 30, 1911	20	.....	10.00
Lewis Jefferson.....	Parcel 9.....	do.....	100	.....	75.00
Robert Murphy.....	Parcels 1 and 3.....	do.....	445	.....	173.50
George C. Taylor.....	Parcel 4, part of parcel 8, parcel 6, and parcel 29.	Feb. 1, 1911	247	.....	196.25
Do.....	Part of parcel 8.....	Nov. 15, 1910	136	.....	225.00
Urban & Bradley.....	Parcel 13.....	Mar. 15, 1911	125	.....	84.00
Washington Brick and Terra Cotta Co.	Parcels 2 and 10.....	June 30, 1911	570	.....	427.50
Total.....	.....	.....	.....	.....	1,565.25

## TOTAL RENTALS.

Potomac River front.....	\$14,873.00
Anacostia River front.....	503.10
James Creek Canal.....	1,565.25
	16,941.35

## REPORT OF BOARD FOR CONDEMNATION OF INSANITARY BUILDINGS.

OCTOBER 1, 1910.

SIR: We have the honor to submit the following report of the transactions of the board for the condemnation of insanitary buildings for the year ending June 30, 1910:

	Examined.				Demolished.				Repaired.			
	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.	1907.	1908.	1909.	1910.
Alleys.....	175	156	79	94	89	124	52	68	33	64	50	97
Streets.....	274	354	349	315	115	217	179	154	61	66	115	187
Total.....	449	510	428	409	204	341	231	222	94	130	165	284

*Total number of houses acted upon since the creation of the board for the condemnation of insanitary buildings up to and including June 30, 1910.*

	Examined.	Demolished.	Repaired.	Pending.
Buildings in alleys.....	504	343	244	31
Buildings in streets.....	1,292	665	432	81
Total.....	1,796	1,008	676	112

Cases referred for appropriate action under existing regulations..... 227  
 Total number of meetings of the board for the condemnation of insanitary buildings up to and including June 30, 1910..... 14

Preliminary notices served..... 249  
 Condemnation notices served..... 82  
 Condemnation signs affixed to buildings..... 52

Total..... 383  
 Number of tenants in streets and alleys required to secure other quarters through action on the part of the board for the condemnation of insanitary buildings for the year ending June 30, 1910..... 754

Total number of tenants in streets and alleys required to secure other quarters through action on the part of the board for the condemnation of insanitary buildings since the creation of the board.....	2, 922
Number of tenants in streets and alleys benefited by repairs to dwellings through action on the part of the board for the condemnation of insanitary buildings for the year ending June 30, 1910.....	831
Total number of tenants in streets and alleys benefited by repairs since the creation of the board for the condemnation of insanitary buildings.....	2, 431
Number of inspections and miscellaneous visits made in connection with examination of work and service of notices.....	\$ 3, 040
Assessed valuation of improvements removed in alleys during fiscal year 1910.....	\$5, 900
Assessed valuation of improvements removed in streets during fiscal year 1910.....	\$30, 800
Total assessed valuation of improvements removed in streets and alleys during fiscal year 1910.....	\$36, 700

In calculating the assessed valuation of property demolished no consideration has been given to the value of the land, which, in all cases greatly exceeds the value of the improvements located thereon. The improvements are taken at the assessed valuation, which is supposed to be two-thirds of its actual value.

Rental value of houses removed in alleys during the year ending June 30, 1910.....	\$4, 265. 60
Rental value of houses removed in streets during the year ending June 30, 1910.....	12, 401. 28
Total rents per annum.....	16, 666. 88

No vouchers have been drawn against the appropriation, as proper action has been taken by the owners or owner to remove or repair such structures as were condemned by the board.

Eight cases have been referred to the corporation counsel for appropriate action in the police court, which resulted in the vacation or removal of the buildings in question.

Two cases are now pending, one before the court of appeals and one in the supreme court of the District of Columbia, and it is impossible at the present time to determine the outcome.

Special attention is still being given to structures unprovided with sewer and water connections, with a view to assisting the health department in eliminating box privies by making the owner provide such connection or remove the structure if its condition does not warrant the expense of connecting it with the public sewer and water main.

In the enforcement of the regulation requiring a proper sanitary condition in premises where food is served to transient customers, it has been necessary for the board to make examination of many lunch rooms, oyster houses, and other places where food was prepared, in order to have the building placed in a satisfactory condition, demolished, or vacated for the purpose proposed.

Four hundred and fifty-six of the tenants affected by the removal of condemned buildings were colored and 31 were white. Many of the tenants affected have gone, and others are going to the suburbs, both in Maryland and Virginia and the outlying sections of the District and renting or purchasing cheap homes with fairly large-sized lots.

The majority of houses located in the alleys at the present time are of such a character structurally that under the present law they are not condemnable to destruction but are kept in repair because of notices served from time to time as conditions warrant.

Consideration is now being given by the board to the conversion of certain alleys into interior parks or playgrounds and Willow Tree alley SW., square 534, has been selected by the board as one of the first alleys that would properly come within the scope of this class of legislation.

Data is now in course of preparation, and the approximate cost of the work and all figures appertaining thereto will be the subject of a special report to the commissioners as soon as same is completed.

In the inspection of houses in the distant suburbs it is found that many insanitary conditions are created by the lack of adequate sewer and water facilities, and it is respectfully recommended that action be taken to extend sewer and water mains as soon as appropriations for same may be available.

Credit is due generally to the owners, both resident and nonresident and the real estate agents throughout the city for prompt compliance with the orders of the board

<sup>a</sup> Average of 9.4 inspections and miscellaneous visits per working day during year.

and also for assistance rendered in many cases of unrecorded transfers, failure to locate owners through the directories and other reasons which rendered the service of proper notices peculiarly difficult.

Building permits for repairs show that a great many permits have been applied for and granted to make repairs and alterations that would have been acted upon by the board had not the owners taken the initiative and made such changes and repairs as were found to be necessary.

On account of the refusal of owners to demolish it has been necessary for the board to remove three buildings during the fiscal year 1910—one located on a street and two located in an alley. In this connection the sum of \$5 was obtained for the old material contained in the two alley houses, and the said amount was deposited with the collector of taxes, repayable to the owner upon demand. Relative to the house located in the street, the old material contained in the building paid for the demolition.

Two criticisms of the work of the board have been heard during the past year: First, that the board has been proceeding too rapidly with the demolition of insanitary buildings; and second, that the board has not been proceeding rapidly enough. If the first criticism is just, then that should be found upon inquiry that the rental values of the cheapest type of sanitary houses have increased to a greater extent than have the rental values of houses of other kinds, and there should possibly be found difficulty in obtaining such houses at any price. And if the work of the board has been progressing too slowly, it should be possible to point to the too prolonged existence of insanitary buildings condemnable under existing law.

The observations of the board, however, fail to show any considerable number of small insanitary houses that the board might condemn, but against which action has not been taken. Unsanitary houses, it is true, still exist in many parts of the District, which a casual observer might regard as condemnable. With respect to these, however, closer examination will generally disclose that they are properly lighted, are dry, have tight roofs, are provided with ample facilities for heating and ventilating, and are properly drained in so far as drainage facilities are available. Such houses, of course, can not be condemned by the board, however offensive they may be in the senses of beauty and neatness. With respect to the charge that the board is proceeding too rapidly, inquiry made under the direction of the board during the past year showed that there are a reasonable number of vacant sanitary houses renting from \$7.30 per month to \$16.50 per month, and available for the occupants of such houses as might be demolished by order of the board. The results of this inquiry into the rental market have been confirmed by the observations of the board in the course of its work throughout the District and are supported by the records of the office of the inspector of buildings, who show the issue of permits for the erection of a large number of small sanitary buildings.

As the result of a careful consideration of criticisms referred to, the board is of the opinion that there is no present occasion for materially increasing or materially diminishing the rate at which it is working.

E. M. MARKHAM,  
*Captain, Corps Engineers, U. S. Army,*  
*Assistant to Engineer Commissioner.*

WM. C. WOODWARD, M. D.,  
*Health Officer, D. C.*

MORRIS HACKER,  
*Building Inspector, D. C.*  
*Board for the Condemnation of Insanitary Buildings.*

To the COMMISSIONERS OF THE DISTRICT OF COLUMBIA,  
(Through Maj. WM. V. JUDSON,  
*Corps Engineers, U. S. Army,*  
*Engineer Commissioner, D. C.)*

## REPORT OF ASSISTANT ENGINEER IN CHARGE OF ROCK CREEK PARK, DISTRICT OF COLUMBIA.

OCTOBER 3, 1910.

SIR: I have the honor to transmit herewith a report of operations in Rock Creek Park during the fiscal year ended June 30, 1910.

The appropriation being only about sufficient for maintenance of the roads, paths, and grounds, little new work was undertaken during the year.

A rustic shelter with thatched roof was built on Beach drive near the Military road, but was mostly destroyed by fire shortly after completion. The reservoir on Blagden avenue, used for the supply of sprinkling wagons, was enlarged and the discharge pipe overhauled. A contract was let for a stone and concrete arch with a span of 16 feet over a stream crossing Beach driveway above the upper ford, to cost \$996 exclusive of back filling and other extra work. This bridge was not completed at the close of the year. The macadamized roads were surfaced with screenings. The hire of teams, except for a few months in the busiest season, was discontinued, and seven horses condemned as unfit for use by the police and fire departments were procured for use in sprinkling wagons and other work; and at the same time a complete equipment of dump wagons and carts, and harness were procured. It is believed that all the hay necessary for these teams can be cut in the park and that a saving will result from the change.

It is proposed, in the fiscal year ending June 30, 1911, if funds permit, to build a road into the park from Sixteenth street above the high-service reservoir near Kennedy street, and to oil a part of the roads where sprinkling is difficult. It is intended, as funds permit, to extend the system of macadamized roads, to build shelters, and to open gradually the portion of the park above the Military road to general use.

For the fiscal year ending June 30, 1912, an estimate of \$25,000 has been submitted, which sum is proposed to be used in carrying out a part of the project described.

A statement of expenditures during the year follows:

Labor for maintenance.....	\$10,714.02
1,150 cubic yards crushed stone and screenings.....	1,461.98
Hauling stone.....	472.53
Contract for bridge on Beach drive.....	996.00
Materials and labor for shelter near Military road.....	475.81
Wagons, carts, harness, etc.....	488.22
Feed and forage.....	202.49
Materials for repair of sprinkling wagons.....	267.34
Small items, materials and supplies.....	101.33
Tools.....	88.26
Blacksmithing.....	70.25
Disbursing officer.....	56.25
Printing and mounting maps.....	7.50
Manure.....	32.00
Total.....	\$15,433.98

Respectfully submitted.

L. R. GRABILL,  
*Assistant Engineer.*

Maj. WILLIAM V. JUDSON,  
*Engineer Commissioner, D. C.,  
Secretary Board of Control, Rock Creek Park.*

## REPORT OF THE SUPERINTENDENT OF THE DISTRICT BUILDING.

WASHINGTON, D. C., July 29, 1910.

SIR: We have the honor to report that, in addition to the routine work incident to the maintenance of the District Building during the fiscal year ending June 30, 1910, we have been able, with the practice of strict economy, to make several extensions and improvements unprovided for in the appropriation for the construction of the building; among others, painting of about two-third of the rooms, and the installation of a full set of air washers and purifying apparatus in connection with the heating and ventilating system, whereby these systems are brought up to the highest possible standards, and effect an economy in heating the building and making it more comfortable during the heating period.

The force employed under the superintendent of the building is to be commended for its efficiency and loyalty, which makes possible the maintenance of the building in excellent order at a cost which is believed to be materially lower than is usual in other buildings of similar character.

<sup>a</sup> Amount of \$433.98 above appropriation accounted for by repayments from other appropriations.

The increase in force asked for in the estimates for the next fiscal year is the minimum that should be employed to produce economical results, and the increases of salary recommended are well merited and are still below salaries paid for similar services in other buildings of the character of this.

The details of expenditures are shown in the auditor's report of the appropriation for the "Maintenance of the Municipal Building, D. C., 1910."

Very respectfully,

E. M. MARKHAM,  
*Captain, Corps of Engineers, U. S. Army.*

MARK BROOKE,  
*Captain, Corps of Engineers, U. S. Army,*  
*Jointly, Superintendent of the District Building.*

Maj. WILLIAM V. JUDSON,  
*Corps of Engineers, U. S. Army,*  
*Engineer Commissioner, D. C.*

## APPENDIX.

### SPECIFICATIONS FOR PAVING STREETS AND AVENUES WITH SHEET ASPHALT

1. *Work.*—The work to be done under this contract will consist of paving with sheet asphalt such streets, avenues, and roads in the District of Columbia, or parts thereof, or doing any portion of such work, as may be ordered in writing by the Commissioners of the District of Columbia, under appropriation for the fiscal year ending June 30, 1911. The estimated amount is 18,000 square yards of asphalt surface and 1,500 square yards of vitrified block gutter. These amounts are approximations only and may be considerably varied from; but they will be used in canvassing bids and the award will be based thereon, and will be made to the lowest acceptable bidder for all the work scheduled. The commissioners especially reserve the right to regulate the time and order of executing work ordered under this contract as may appear most advantageous to the interests of the District.

2. *Bids.*—The contractor will, for the prices bid, do all the work prescribed in these specifications, do all the necessary grading and trimming of the roadbed, and all rolling; provide bridges, fences, and other means of maintaining travel on intersecting streets, roads, and railroads, and all private driveways, after giving due notice to the parties affected thereby, maintain the same in good and safe condition as long as may be necessary, and then remove such temporary expedients and restore such roads to their proper condition; provide watchmen, red lights, fences, and other precautionary measures necessary to the protection of persons and property; furnish all materials (except as specified) and all tools and implements, labor, and transportation required to lay and put in complete order for use the specified pavement, and do each and all of these to the satisfaction of the engineer. Upon the completion of the work he will remove any temporary structures erected during the progress of the work, and restore all fixtures, pavements, and parking, both public and private, to satisfactory condition.

3. *Grading and subgrade.*—The area over which the pavement is to be laid must be excavated to the proper depth below the surface of the pavement when completed, any objectionable or unsuitable matter below the bed being removed to such depth as may be directed by the engineer and the space filled with good gravel or other acceptable material, compactly rolled and rammed. The bed, after being trimmed so as to be parallel to the surface of the pavement when completed, will be thoroughly compacted by rolling, with a roller weighing not less than 5 tons and by heavy ramming at places which can not be reached by the roller, dampening the bed before rolling and ramming, if required, to the satisfaction of the engineer. No extra allowance will be made for trimming or rolling, but the volume of earth, etc., removed will be paid for as grading of its class.

4. *Concrete base.*—Upon the bed thus prepared there will be laid a 6-inch foundation of concrete as directed, made of the following materials by volume: 1 part Portland cement, 3 parts sand, and 7 parts gravel.

5. *Cement.*—The cement used shall conform to the current specifications for supplying cement of its kind to the engineer department of the District of Columbia. No cement shall be used upon the work until it has been tested in the office of the engineer commissioner and accepted by him, and tests to extend over such length of time, not exceeding twenty-eight days, as the engineer commissioner may think necessary. The cement while in storage or upon the work, or while being hauled upon the work, shall be properly protected, and no cement shall be used which, in the opinion of the engineer commissioner, has been injured by age or exposure. The cement shall be kept by the contractor in store, under proper cover, in the city of Washington, subject to inspection for at least ten days after notifying the inspector of asphalt and cements, before it can be used on the streets, and if deemed advisable by the engineer commissioner, twenty-eight days. Should the contractor's work be delayed by his failure to keep himself supplied with the necessary amount of approved cement, the District shall have the right to furnish him with tested cement from the stocks on hand at its warehouse and charge said contractor with the cost of same at the rate



of \$2.50 per barrel of Portland cement for each and every barrel so furnished, and collect the amount due therefor from any moneys found to be due to said contractor by the District.

6. *Sand*.—The sand used shall be clean, sharp river or pit sand, containing both fine and coarse grains, but free from sewerage, mud, clay, mica, paper, leaves, and other foreign matter and not showing when shaken with water and after subsidence more than 5 per cent by volume of silt.

7. *Gravel*.—Gravel shall be clean, washed gravel, and shall not contain pebbles greater than  $1\frac{1}{2}$  inches in their largest dimensions.

8. *Water*.—Water used for mortar and concrete shall be fresh and clean, free from earth, dirt, or sewerage, and shall be used in such quantity as the engineer may direct.

9. *Platforms*.—Platforms shall be provided upon which all sand, gravel, and broken stone for concrete shall be placed when brought upon the line of work and kept there until used.

10. *Mixing*.—The thorough mixing and incorporation of all materials will be insisted upon. If done by hand labor the dry cement and sand shall be turned over and mixed with shovels by skilled workmen not less than six times before the water is added; the stone after being drenched with water shall be added to the mixed sand and cement; the drenching shall not be done while the stone or gravel is in the wheelbarrow; the whole mass shall be thoroughly turned over, with shovels, not less than four times, and mixed upon a water-tight platform until every particle of stone is completely enveloped with mortar. The whole operation of mixing and laying each batch shall be performed as expeditiously as possible by the aid of machinery or a sufficient number of skilled men. If the concrete is mixed in batches requiring one barrel of cement, the platform must not be smaller than 10 feet by 12 feet, nor will a larger amount of concrete than can be made with one barrel of cement be allowed to be mixed in one batch by hand. In mixing by machinery the materials must be so delivered as to insure a uniform product of the specified proportions of all ingredients to the satisfaction of the engineer commissioner.

11. *Setting*.—Concrete shall not be used after it has been begun to show evidence of setting. No concrete which has once set shall be used as material for mixing a new batch.

Each batch of concrete after being mixed shall be spread in place in horizontal layers so as to give the requisite thickness after being tamped, and shall then be thoroughly compacted. Any evidence of lack of compaction will be regarded as sufficient reason for removal and replacement of the base. The base must be watered each twenty-four hours, either by rain or artificially, until covered with binder or seven days old. Hauling over base less than three days old must not be allowed unless planks are laid.

12. *Binder*.—The binder course shall be composed of clean, broken stone, equal in quality to the stone for the base, and passing an inch and a quarter screen. Eighty-five per cent of this shall pass said screen in its longest dimensions, and of the remaining 15 per cent no piece shall have a larger dimension than  $1\frac{1}{2}$  inches, and the stone, after passing the heating drums, shall not contain less than 5 nor more than 15 per cent of material passing a No. 10 screen.

The stone will be heated not higher than 350° F., in suitable appliances. It is then to be thoroughly mixed by machinery with asphalt cement, such as is acceptable for surface cement, penetration 60 to 90, at such temperature and in such proportions that the resulting binder will have life and gloss without an excess of cement. Should it appear dull from overheating or lack of cement it will be rejected. While hot it will be hauled upon the work, spread upon the base so that when compacted it will be at least  $1\frac{1}{2}$  inches in thickness, and immediately rammed and rolled until it is cold. Should the resulting course not show a proper bond, it shall be immediately removed and replaced by the contractor. Binder and top shall not be taken from the yard to the site of the work when weather conditions are, in the judgment of the engineer, unsuitable for the work of laying the pavement.

The contractor shall not enter upon a concrete base in order to lay the binder course until it has obtained sufficient strength for such a purpose, and during the period between laying the base and binder he shall properly protect it and, when ordered by the engineer commissioner, shall sprinkle it in warm weather between the hours of sunset and sunrise as often as may be deemed necessary and in cold weather cover it with a material suitable for its protection.

13. *Asphalt wearing surface*.—The wearing surface of the pavement shall be composed of asphalt cement; clean, sharp-grained sand; fine absorbent mineral dust.

14. *Asphalt cement*.—The asphaltic cement must be practically free from water, and must be within the range of 40 and 70 penetration when tested at 77° F. The amount of penetration to be fixed by the engineer commissioner.

Preference will be given to an asphaltic cement that is not readily affected by the action of water, provided it is satisfactory in other respects. If an asphaltic cement

is accepted that is affected by water, some provision satisfactory to the engineer commissioner must be made to guard against the results of such action, and such work must be included in the price bid.

If an asphalt has been proposed for use by the contractor and approved by the engineer commissioner, no change in the asphalt to be used shall be made unless with the approval of the engineer commissioner. If an asphalt is submitted for use which has not been successfully used for a period of at least two years for paving under conditions similar to those existing in the District of Columbia, its use may be limited to such extent as may be deemed advisable, or it may be rejected for use entirely, in the discretion of the engineer commissioner.

The bitumen of the asphaltic cement must comply with the following test:

1. It must be of such a character that if when tested at 32° F. it shows a hardness of 10 penetration it must not when tested at 115° F. be softer than 350 penetration.

2. When a briquette of the pure bitumen, having a minimum cross section of 1 square centimeter, is tested for ductility at 77°, the bitumen must stretch 15 centimeters before breaking.

3. When the bitumen is heated in an open tin at a temperature of 300° F. for eighteen hours in a hot-air oven, it must not show a loss by volatilization of over 5 per cent and must not have been hardened over 50 per cent by this heating.

The asphaltic cement must never be heated to a temperature that will injure it.

When the asphaltic cement contains over 5 per cent of material that will separate by subsidence while in a molten condition, it must be thoroughly agitated before drawing from storage and while in use in the supply kettles so as to insure a uniform cement.

These properties shall be determined by tests made by uniform methods, descriptions of which are on file in the office of the engineer commissioner.

15. *Sand.*—The sand in use shall be hard grained and moderately sharp. On sifting it should have at least 15 per cent of material that would be caught on a 40-mesh per inch screen, 25 per cent of material that will pass an 80-mesh to the inch screen, 10 per cent of which at least must pass a 100-mesh to the inch screen. If the sand to be used does not contain the desired fine material, mineral dust can be added to make up the deficiency, and in any case at least 5 per cent of such mineral dust shall be used. The amount of fine material may be diminished on streets of light traffic when approved by the engineer commissioner.

16. *Mineral dust.*—This shall be any fine, hydraulic cement or limestone dust, the whole of which shall pass a 30-mesh screen and at least 85 per cent pass a 100-mesh screen.

17. *Asphalt paving mixture.*—The materials complying with the above specifications shall be mixed in proportion by weight, depending upon their character and the traffic on the street and upon the character of the asphalt, and will be determined by the engineer commissioner; but the percentage of bitumen in any mixture soluble in carbon bisulphide shall not exceed the limits, 9 to 13 per cent. If the proportions of the mixture are varied in any manner from those specified, the mixture will be condemned; its use will not be permitted; and if already placed on the streets it will be removed and replaced by proper materials at the expense of the contractor.

The sand, or the mixture of sand and mineral dust, and the asphaltic cement will be heated separately to about 300° F. The dust, if limestone, will be mixed while cold with the hot sand in the required proportions and then mixed with the asphaltic cement at the required temperature and in the proper proportion in a suitable apparatus, so as to effect a thoroughly homogeneous mixture. Sand boxes and asphalt gauges will be weighed in the presence of inspectors as often as may be desired.

Samples of all material entering into the composition of the pavement shall be supplied to the inspector of asphalt and cements when required, in suitable tin boxes and cans, and he shall have access to all branches of the works at any time.

The pavement mixture, prepared in the manner thus indicated, will be brought to the ground in carts at a temperature of not less than 250° or more than 350° F., and if the temperature of the air is less than 60° F. the contractor must provide canvas covers for use in transit. It will then be thoroughly spread to a thickness of at least 2½ inches by means of hot iron rakes, in such manner as to give uniform and regular grade, so that after having received its ultimate compression it will have a net thickness of at least 1½ inches. This depth will be constantly tested by means of gauges furnished by the engineer commissioner. The surface will then be compressed by hand rollers, after which a small amount of hydraulic cement will be swept over it, and it will then be thoroughly compressed by a steam roller weighing not less than 175 pounds to the inch, the rolling being continued for not less than five hours for every 1,000 yards of surface.

18. *Asphalt base.*—In resurfacing work where the depth of binder would be excessive, an asphaltic or coal-tar base, as directed, will be first laid. It will be composed of clean, broken stone, free from spalls, that will pass through a 3-inch ring, well rammed, and rolled with a steam roller weighing not less than 5 tons. The rolling will be continued until the stone ceases to creep before the roller and until it is evident that the final compression has been reached. It will then be thoroughly coated with asphaltic paving cement or coal tar of approved quality, as directed.

19. *Hauling and grading.*—(a) The old material from the streets will be hauled to the nearest property yard or to such other point as the engineer commissioner may direct. (b) Lines and grades will be established by the engineer commissioner, and no work will be commenced until these are given. (c) Contractors are to be responsible for the proper preservation of all stakes, etc., set by the engineer for the determination of line or grade; should any such be disturbed through carelessness the cost of replacing same will be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement. (d) All material excavated, of whatsoever nature, is the property of the District, and will be disposed of as the engineer commissioner shall direct. (e) The filling will be done in layers not exceeding 12 inches in thickness, and all material used for this purpose will be subject to approval. If improper or unsuitable material be used, it will be removed at the cost of the contractor. (f) All measurements will be made in place, and payments made thereon. (g) Should the grading involve work in both "cut" and "fill," the measurement of it will be computed on the basis of the volume of the material in place in the "cut" only; the excavated earth from the "cut" section deposited in the "fill" will not be again paid for as "fill." Should the amount of cut on the street not suffice to make the necessary fill, the amount borrowed from other designated localities will be paid for as grading.

20. *Laying vitrified block.*—Vitrified-block gutters will ordinarily be about 18 inches wide, laid on a concrete base 6 inches in depth, of the same material and proportions and laid in the same manner as prescribed in these specifications for the concrete base under asphalt pavements.

As soon as practicable after the concrete base has been laid, a dry mixture, composed of 4 parts of the sand specified in paragraph 6 and 1 part of Portland cement, thoroughly mixed, will be spread thereon, as a bed for the paving blocks, to the depth of not less than one-half inch, and regulated so as to be exactly parallel to the finished grade of the gutter. On the bed prepared for them, the blocks will be set on edge, with the longest dimensions at right angles to the curb, as directed by the engineer.

The longitudinal joints of each course of blocks laid must be broken by a lap of not less than 4 inches.

The blocks will then be carefully rammed by placing a plank over several courses and ramming of the plank with a heavy hammer. The ramming will be continued until the blocks reach a firm, unyielding bed and present a uniform surface, with proper grade. Any lack of uniformity in the surface or defect in the grade must be corrected by taking up and relaying the blocks.

After proper ramming the entire gutter will be thoroughly grouted with a thin, easily flowing grout, of neat natural cement.

A similar construction of block to that described for the gutters may be used adjacent to railroad tracks; the base will in that case extend to the bottom of the cross ties, or be at least 6 inches thick.

The blocks will be furnished the contractor at the District property yards, and must be hauled to the work at his expense.

#### ADDITIONAL WORK.

21. The following specifications will cover incidental work which may be required of the contractor:

22. *Setting 6 by 20 inch granite and bluestone curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 24 inches below the top of the curb, when set, and 20 inches wide, will be excavated to receive the curb and its gravel bed; the dimensions of the trench, in width, will be 14 inches from the curb line toward the building line of the street, and 6 inches from said curb line toward the center line of the street. In this trench thus prepared the curb will be set, and brought to line and grade, with plumb face. Spalls, of stone, hard-burned brick, or other acceptable substance, prepared for the purpose, will be used to adjust the stone to grade, and these spalls will be so placed and adjusted as to support the curbing permanently, and afford a firm and stable support for it, without the use of small chips and fragments, used as "shimming" pieces, to wedge the stone in place. After the stone has been properly placed, and adjusted to line and grade, the trench

will be filled with gravel of approved quality, to within 8 inches of the top of the curb; the filling to be done in layers of not more than 3 inches in depth, and thoroughly compacted by suitable ramming. Close contact joints and even surfaces must be made, and the lines and grades furnished strictly followed.

23. *Setting 8 by 8 inch granite curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 15 inches below the top of the curb when set, and 18 inches wide, will be excavated to receive the concrete and the curb. The dimensions of the trench in width will be 14 inches from the curb line toward the building and 4 inches from the curb line toward the center line of the street. In the trench thus prepared a bed of concrete will be laid, filling the trench to a depth of 5 inches, composed of 1 part of Portland cement, 4 parts of clean concrete sand, and 10 parts of screened pebbles, the material to be mixed and laid under the same conditions as prescribed for laying cement concrete base for sheet asphalt pavements. On the base prepared and laid as above, the curb will be placed before the concrete has set, and adjusted to line and grade by setting it to a firm, unyielding bearing in a bed of freshly made concrete, by the use of heavy wooden mauls. The face of the curb must be plumb and true to line, and the top of it carefully set to grade with close and even contact joints. After the stone has been set to line and grade, the trench on the footwalk side will be immediately filled with concrete to within 5 inches of the top of the curb, which will be thoroughly rammed and compacted, after which it will immediately be covered with earth to prevent injury to it through too rapid evaporation, etc. In case vitrified-block gutters are to be laid in front of the curb, any portion of the concrete base of the curb that would interfere with the laying of block must be removed immediately after the curb has been set.

24. *Resetting 6 by 20 inch granite and bluestone curb.*—The work to be done under this classification is identical with that specified for setting curb, except no hauling of the curb is required other than that incidental to the necessary disposition of it upon the line of the work. Under this classification, also, the curb may be adjusted to line and grade without removing it from its trench, if so ordered by the engineer.

25. *Resetting 8 by 8 inch granite curb.*—The work to be done under this classification is identical with that specified for setting this class of curb, except that no hauling of the curb is required other than that incidental to the disposition of it in the work, and no new concrete is required other than that sufficient to imbed the stone and back it, and adjust it to the line and grade.

26. *General instructions.*—All curb will be furnished to the contractor at the District property yard, and will be hauled by him to the site of the work; any curbing unaccounted for, or improperly disposed of, or damaged, or broken, through careless or unskilled handling, will be charged against him and the value of the loss to the District will be deducted from any amount due the contractor for work done, as determined by the engineer.

All expenses connected with or incidental to the work of setting or resetting curb, as described above, including the hauling of the curbing, preparing the curb trenches, and the necessary grading connected therewith, furnishing gravel and spalls, furnishing and placing concrete and all other material and labor necessary to execute the work in accordance with the specifications therefor, are included in the fixed price for the respective items as hereinafter stated; the cost of dressing, joining, or cutting the curb will be paid for additionally, but no other claim for additional compensation will be entertained.

Should the adjoining brick footwalks be disturbed in order to set or reset the curb, the portion so disturbed shall be repaved, if required by the engineer, without cost to the District.

27. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the engineer commissioner. All such work shall be in accordance with current District specifications. Prices paid for this work will be as stated below:

- (1) Removing old curb, including haul not to exceed 2 miles, 8 cents per linear foot.
- (2) Hauling same beyond distance of 2 miles, 1 cent per linear foot per mile.
- (3) Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul, not to exceed 1 mile, 15 cents per square yard.
- (4) Removing old granite block, including haul, not to exceed 1 mile, and removal of old paving bed and cleaning concrete base where same exists, 25 cents per square yard.
- (5) Hauling same beyond distance of 1 mile, 1 cent per square yard per quarter mile or fraction thereof.
- (6) Grading and hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.
- (7) Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.
- (8) Removing old cold-tar and bituminous pavement or base and hauling, not to exceed 1,000 feet, 85 cents per cubic yard.

(9) Removing old concrete base and hauling, not to exceed 1,000 feet, \$1.50 per cubic yard.

(10) Hauling excavated material, per 100 feet, over first 1,000 feet, three-quarters of a cent per cubic yard.

(11) Hauling from District property yard and setting 6 by 20 inch curb, 20 cents per linear foot.

(12) Hauling from District property yard and setting 8 by 8 inch curb, 35 cents per linear foot.

(13) Resetting 6 by 20 inch bluestone curb, 20 cents per linear foot.

(14) Resetting 8 by 8 inch curb on old concrete base, 15 cents per square yard.

(15) Relaying vitrified brick or block on old concrete base, 60 cents per square yard.

(16) Laying asphaltic or bituminous broken stone base in place, \$3 per cubic yard.

(17) Laying and relaying asphalt and vitrified blocks on gravel base, 40 cents per square yard.

(18) Adjusting manhole tops and basin covers to grade, \$2 each.

(19) Laying and relaying granite blocks, 75 cents per square yard.

(20) Portland cement concrete base as specified herein, \$6 per cubic yard.

(21) Relaying cobble and rubble, 30 cents per square yard.

(22) Dressing, jointing, and cutting curb, etc. (stonecutter's time), including setting-up labor, 65 cents per hour.

(23) Repairing cement walks, \$1.70 per square yard.

(24) Repairing brick sidewalks, 25 cents per square yard.

(25) Adjusting electric-light manholes to grade, as follows:

(a) Size, 14 by 14 inches, 75 cents each.

(b) Size, 18 by 15 inches, \$1 each.

(c) Size, 36 by 26 inches, \$1.50 each.

(d) Size, 6 by 6 feet, \$4 each.

(26) Resetting 8 by 8 inch curb on new concrete base, 31 cents per linear foot.

(27) Laying asphalt surface, 44 cents per cubic foot.

(28) Laying standard asphalt surface, 2½ inches thick before compression, 60 cents per square yard.

(29) Laying asphalt binder, 25 cents per cubic foot.

(30) Cleaning old vitrified blocks for relaying, 40 cents per square yard.

28. *Bond.*—Good and sufficient bond in the penal sum of 25 per cent of the estimated amount of the contract, with sureties or a surety company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor or materials in the prosecution of the work provided for in the contract.

29. *Guaranty.*—All work under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from date of its acceptance by the commissioners. This date shall be the date of completion of the last street thereunder. Ten per centum of the cost of this work will be retained and disposed of as otherwise provided for herein.

It is further expressly understood and agreed that if any of the pavements laid should, for any reason whatsoever, within the period of five years, prove inferior to the best laid in the District prior to July 1, 1904, then the contractor shall, on demand of the commissioners, remove such defective pavements and relay them with new material of approved quality, and in accordance with these specifications. The engineer commissioner shall decide the question of inferiority.

On expiration of guaranty for maintenance, the work is to be inspected, and all imperfections, depressions and unevenness of surface, alignment and grade of curbs, sidewalks, etc., must be corrected where and to such extent as the engineer commissioner shall direct, upon which the engineer commissioner will accept the same in writing, and until such acceptance the guaranty shall be in force. Repairs that may become necessary during the guaranty period will be made by the contractor when ordered by the engineer.

30. *Payments.*—Payments will be made monthly, provided the progress of the work is satisfactory, less 10 per cent of each estimate, to be withheld until final payment; but 10 per cent of the cost of the work will be retained and invested as hereinbefore provided.

31. *Retain fund.*—The retain fund shall be subject to the control of the Commissioners of the District of Columbia for the purpose of maintaining the work in repair and making good any defects discovered during the period specified, and insuring that the terms of the contract shall be strictly and faithfully performed. In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners

may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require of the contractor and his sureties that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

32. *Site of work.*—The bidder is expected to examine the site of work before bidding, as no allowance will be made for any unusual difficulties which may arise, either affecting the original construction or maintenance of the finished work.

33. Certificates of indebtedness against street railway companies will be given to the contractor for all work done and all materials furnished by him for the space which must be paved and kept in repair at the expense of said companies in accordance with existing laws.

34. Contractors shall be responsible for any work done upon any street over plumbers' cuts or other work done by permission of the commissioners before the work is begun.

35. The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the Engineer Commissioner on the same basis as in case of extra work.

### SPECIFICATIONS FOR PAVING STREETS AND AVENUES WITH ASPHALT BLOCK.

1. *Work.*—The work to be done under this contract will consist of paving with sheet asphalt such streets, avenues, and roads in the District of Columbia, or parts thereof, or doing any portion of such work, as may be ordered in writing by the Commissioners of the District of Columbia, under appropriation for the fiscal year ending June 30, 1911. The estimated amount is 6,500 square yards.

2. *Bids.*—The contractor will, for the prices bid, do all the work prescribed in these specifications, do all the necessary grading and trimming of the roadbed and all rolling; provide bridges, fences, and other means of maintaining travel on intersecting streets, roads, and railroads and all private driveways after giving due notice to the parties affected thereby; maintain the same in good and safe condition as long as may be necessary, and then remove such temporary expedients and restore such roads to their proper condition; provide watchmen, red lights, fences, and other precautionary measures necessary to the protection of persons and property; furnish all materials (except as specified) and all tools and implements, labor, and transportation required to lay and put in complete order for use the specified pavement, and do each and all of these to the satisfaction of the engineer. Upon the completion of the work he will remove any temporary structures erected during the progress of the work, and restore all fixtures, pavements, and parkings, both public and private, to satisfactory condition.

3. *Asphaltic blocks.*—(a) The size of the blocks will be 5 by 4 by 12 inches for gravel base and a variation of one-fourth of an inch from these dimensions will be sufficient ground for rejecting any block.

(b) All bids must be accompanied by a specimen block of the size and quality described in these specifications, labeled with the name of the bidder and locality of the factory. Bids not accompanied by specimen blocks will not be accepted. The blocks will be tested for specific gravity. All blocks furnished must be equal in quality to the sample, as determined by the Engineer Commissioner.

(c) The blocks will be composed of asphaltic cement, mineral dust, and crushed stone.

4. *Asphaltic cement.*—The asphaltic cement must be practically free from water and shall not at any time reach a temperature high enough to injure it.

If an asphalt is accepted that is readily affected by water, some provision satisfactory to the Engineer Commissioner must be made to guard against the results of such action, and such work must be included in the price bid.

The asphaltic cement must comply with the following requirements and must in any case be subject to the approval of the Engineer Commissioner:

(1) For the purpose of testing the asphaltic cement its composition shall be so regulated by the addition, if necessary, of standard fine absorbent mineral dust that it will contain 50 per cent of bitumen soluble in carbon bisulphide. This cement must be so tough at 32° F. that prism 1 centimeter square by 8 centimeters long between supports will not break under impact at center with less than 15 centimeter drop of 25 gramme weight.

(2) This cement must not be softer than 60 penetration when tested at 115° F.

(3) When this cement is heated in an open tin at a temperature of 300° F. for eighteen hours in a hot-air oven, it must not show a loss by volatilization of over 3 per cent, and it must not be hardened over 50 per cent by this heating.

The asphaltic cement must be thoroughly agitated before drawing from storage and while in use the supply kettles, so as to insure a uniform cement.

These tests shall be made by uniform methods, descriptions of which are on file in the office of the Engineer Commissioner.

5. *Mineral dust.*—This shall be any fine, absorbent, inorganic dust not acted on by water, the whole of which shall pass a 30-mesh screen, and at least 85 per cent pass a 100-mesh screen.

6. *Crushed stone.*—The crushed stone in use shall be from any tough, hard rock, and shall not contain any appreciable amount of soft ingredients, such as mica, soft sandstone, or shale. On sifting, not more than 3 per cent shall be retained on a 3-mesh per inch screen, at least 40 per cent must be retained on 20-mesh per inch screen, and at least 12 per cent must pass a 100-mesh per inch screen. If the stone does not contain the desired fine material, mineral dust can be added to make up the deficiency, and in any case at least 5 per cent of such mineral dust shall be used.

7. *Asphaltic block mixture.*—The materials complying with the above specifications shall be mixed in proportions by weight, depending upon their character, which will be determined by the Engineer Commissioner, but in any mixture the percentage of bitumen soluble in carbon bisulphide shall not exceed the limits, 6 to 9 per cent.

If the proportions of the mixture are varied in any manner from those prescribed, the blocks will not be accepted.

The stone and dust and the asphaltic cement must be mixed while hot, and the mixture must be compressed into blocks by methods meeting with the approval of the Engineer Commissioner.

Samples of all material entering into the composition of the pavement shall be supplied to the inspector of asphalt and cements when required, in suitable tin boxes and cans, and he shall have access to all branches of the works at all times.

Blocks for 4-inch pavement are to be manufactured with a total minimum compression of not less than 360,000 pounds per block, press pressure. Those for 5-inch pavement are to be manufactured with a total minimum compression of not less than 240,000 pounds per block, press pressure.

8. *Grading and subgrade.*—The space over which the pavement is to be laid having been excavated to the proper depth below the surface of the pavement when completed, any objectionable or unsuitable matter below the bed will be wholly removed and the space filled with good gravel or other acceptable material, compactly rolled or rammed. The bed will then be trimmed so as to be parallel to the surface of the pavement when completed, and the entire roadbed will then be thoroughly compacted by rolling a roller weighing at least 10 tons, or by thorough ramming at places which can not be reached by the roller. No extra allowance will be made for trimming and rolling, but the volume of earth, etc., removed will be paid for as grading of its class.

#### ASPHALT-BLOCK PAVEMENT ON GRAVEL BASE.

9. *Gravel base.*—Upon this bed, as above, is to be laid a base of good bank gravel, or other approved material, to be screened from all pebbles measuring more than 1½ inches in their largest dimensions, so as to be 5 inches thick when thoroughly compacted. The gravel will then be thoroughly compacted by rolling with a roller weighing at least 10 tons, or by heavy ramming at places which can not be reached by the roller. The rolling will be continued until the gravel base cracks under the roller without compressing further. Upon this will be placed a layer of fine, sharp sand washed and dried, 2 inches in thickness, to serve as a bed for the blocks, which will be laid directly upon and embedded in it with close joints. Special care will be observed to make the surface of this bed of sand exactly parallel to the surface of the pavement when completed. Should the material found in the space to be occupied by the gravel bed be approved by the engineer for such use, it may be left in place and used as such bed after being satisfactorily trimmed and compacted.

Any material removed from the street in grading that is suitable may, with the approval of the engineer, be used in place of the gravel base if not needed for public use.

10. *Method of laying blocks.*—The asphalt blocks are to be laid on the bed of sand at right angles to the line of the street, and with such crown as the engineer commissioner may direct; each course to be of blocks of a uniform width and depth, and so laid that all longitudinal joints shall be broken by a lap of at least 4 inches. In laying the blocks the pavers must stand or kneel upon the blocks already laid and not upon the bed of sand. Each course of blocks will be driven against the course preceding it by a heavy maul, in order to make the lateral joints as tight as possible, and the longitudinal joints will be closed by pressing each course in the direction of its length by a lever. When thus laid the blocks will be immediately covered with clean, fine sand, entirely



free from any loam or earthy matter, perfectly dry, and screened through a sieve having not less than 20 meshes to the inch. This will be swept or raked into the joints and the blocks will then be carefully rammed by placing a plank or iron plate over several courses and ramming it with a heavy rammer. The ramming will be continued until the blocks reach a firm, unyielding bed and present a uniform surface, with proper grade and crown. Any lack of uniformity in the surface must be corrected by taking up and relaying the blocks. When the ramming is completed a sufficient amount of fine, dry sand, as above described, will be spread over the surface.

11. *Hauling and grading.*—(a) The old material from the streets will be hauled to the nearest property yard or to such other point as the Engineer Commissioner may direct. (b) Lines and grades will be established by the Engineer Commissioner, and no work will be commenced until these are given. (c) Contractors are to be responsible for the proper preservation of all stakes, etc., set by the engineer for the determination of line or grade; should any such be disturbed through carelessness the cost of replacing same will be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement. (d) All material excavated, of whatsoever nature, is the property of the District, and will be disposed of as the Engineer Commissioner shall direct. (e) The filling will be done in layers not exceeding 12 inches in thickness, and all material used for this purpose will be subject to approval. If improper or unsuitable material be used, it will be removed at the cost of the contractor. (f) All measurements will be made in place and payments made thereon. (g) Should the grading involve work in both "cut" and "fill," the measurement of it will be computed on the basis of the volume of the material in place in the "cut" only; the excavated earth from the "cut" section, deposited in the "fill," will not be again paid for as "fill." Should the amount of cut on the street not suffice to make the necessary fill, the amount borrowed from other designated localities will be paid for as grading.

12. *Setting and resetting curb.*—Setting 6 by 20 inch granite and bluestone curb:

This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 24 inches below the top of the curb, when set, and 20 inches wide, will be excavated to receive the curb and its gravel bed; the dimensions of the trench, in width, will be 14 inches from the curb line toward the building line of the street, and 6 inches from said curb line toward the center line of the street. In this trench thus prepared the curb will be set, and brought to line and grade with plumb face. Spalls of stone, hard-burned brick, or other acceptable substance, prepared for the purpose, will be used to adjust the stone to grade, and these spalls will be so placed and adjusted as to support the curbing permanently, and afford a firm and stable support for it, without the use of small chips and fragments, used as "shimming" pieces, to wedge the stone in place. After the stone has been properly placed, and adjusted to line and grade, the trench will be filled with gravel of approved quality to within 8 inches of the top of the curb; the filling to be done in layers of not more than 3 inches in depth and thoroughly compacted by suitable ramming. Close contact joints and even surfaces must be made, and the lines and grades furnished strictly followed.

13. *Setting 8 by 8 inch granite curb.*—This curb will be set in the following manner: A trench parallel to the curb line, having a depth of 15 inches below the top of the curb when set, and 18 inches wide, will be excavated to receive the concrete and the curb. The dimensions of the trench in width will be 14 inches from the curb line toward the building and 4 inches from the curb line toward the center line of the street. In the trench thus prepared a bed of concrete will be laid, filling the trench to a depth of 5 inches, composed of 1 part of Portland cement, 4 parts of clean concrete sand, and 10 parts of screened pebbles, the material to be mixed and laid under the same conditions as prescribed for laying cement concrete base under current specifications for sheet-asphalt pavements. On the base prepared and laid as above, the curb will be placed before the concrete has set, and adjusted to line and grade by setting it to a firm, unyielding bearing in a bed of freshly made concrete, by the use of heavy wooden mauls. The face of the curb must be plumb and true to line, and the top of it carefully set to grade with close and even contact joints. After the stone has been set to line and grade, the trench on the foot walk side will be immediately filled with concrete to within 5 inches of the top of the curb, which will be thoroughly rammed and compacted, after which it will immediately be covered with earth to prevent injury to it through too rapid evaporation, etc. Any portion of the concrete base of the curb that would interfere with the laying of block must be removed immediately after the curb has been set.

14. *Resetting 6 by 20 inch granite and bluestone curb.*—The work to be done under this classification is identical with that specified for setting this class of curb, except that no hauling of the curb is required other than that incidental to the necessary disposition of it upon the line of the work. Under this classification, also, the curb



may be adjusted to line and grade without removing it from its trench, if so ordered by the engineer.

15. *Resetting 8 by 8 inch granite curb.*—The work to be done under this classification is identical with that specified for setting this class of curb, except that no hauling of the curb is required other than that incidental to the disposition of it in the work, and no new concrete is required other than that sufficient to embed the stone and back it, and adjust it to the line and grade.

16. *General instructions.*—All curb will be furnished to the contractor at the District property yard, and will be hauled by him to the site of the work; any curbing unaccounted for, or improperly disposed of, or damaged, or broken, through careless or unskilled handling, will be charged against him, and the value of the loss to the District will be deducted from any amount due the contractor for work done, as determined by the engineer.

All expenses connected with or incidental to the work of setting or resetting curb, as described above, including the hauling of the curbing, preparing the curb trenches, and the necessary grading connected therewith, furnishing gravel and spalls, furnishing and placing concrete and all other material and labor necessary to execute the work in accordance with the specifications therefor, are included in the fixed price for the respective items as hereinafter stated; the cost of dressing, joining, or cutting the curb will be paid for additionally, but no other claim for additional compensation will be entertained.

Should the adjoining brick foot walks be disturbed in order to set or reset the curb, the portion so disturbed shall be repaved, if required by the engineer, without cost to the District.

17. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the Engineer Commissioner. Prices paid for this work will be as stated below:

- (1) Removing old curb, including haul not to exceed 2 miles, 8 cents per linear foot.
- (2) Hauling same beyond distance of 2 miles, 1 cent per linear foot per mile.
- (3) Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul, not to exceed 1 mile, 15 cents per square yard.
- (4) Removing old granite block, including haul, not to exceed 1 mile, 25 cents per square yard.
- (5) Hauling same beyond distance of 1 mile, 1 cent per square yard per quarter mile or fraction thereof.
- (6) Grading and hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.
- (7) Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.
- (8) Removing old coal tar and bituminous pavement or base, and hauling not to exceed 1,000 feet, 85 cents per cubic yard.
- (9) Removing old concrete base and hauling, not to exceed 1,000 feet, \$1.50 per cubic yard.
- (10) Hauling excavated material, per 100 feet, over first 1,000 feet, three-quarters of a cent per cubic yard.
- (11) Hauling from District property yard and setting 6 by 20 inch curb, 20 cents per linear foot.
- (12) Hauling from District property yard and setting 8 by 8 inch curb, 35 cents per linear foot.
- (13) Resetting 6 by 20 inch bluestone curb, 20 cents per linear foot.
- (14) Resetting 8 by 8 inch curb on old concrete base, 15 cents per linear foot.
- (15) Relaying vitrified brick or block on old concrete base, 60 cents per square yard.
- (16) Laying asphaltic or bituminous broken stone base in place, \$3 per cubic yard.
- (17) Laying and relaying asphalt and vitrified blocks on gravel base, 40 cents per square yard.
- (18) Adjusting manhole tops and basin covers to grade, \$2 each.
- (19) Laying and relaying granite blocks, 75 cents per square yard.
- (20) Portland cement concrete base as specified herein, \$6 per cubic yard.
- (21) Relaying cobble and rubble, 30 cents per square yard.
- (22) Dressing, jointing, and cutting curb, etc. (stonecutter's time), including setting-up labor, 65 cents per hour.
- (23) Repairing cement walks, \$1.70 per square yard.
- (24) Repairing brick sidewalks, 25 cents per square yard.
- (25) Laying vitrified brick or block on 6-inch concrete base as specified, \$1.30 per square yard.
- (26) Adjusting electric light manholes to grade, as follows:
  - (a) Size 14 by 14 inches, 75 cents each.
  - (b) Size 18 by 15 inches, \$1 each.
  - (c) Size 36 by 26 inches, \$1.50 each.
  - (d) Size 6 by 6 feet, \$4 each.

(27) Resetting 8 by 8 inch curb on new concrete base, 31 cents per linear foot.

(28) Cleaning old vitrified blocks for relaying, 40 cents per square yard.

18. *Bond*.—Good and sufficient bond in the penal sum of 25 per cent of the estimated amount of the contract, with sureties or a surety company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor or materials in the prosecution of the work provided for in the contract.

19. *Payment*.—Payments will be made monthly, provided the progress of the work is satisfactory, less 10 per cent of each estimate, to be withheld until final payment; but 10 per cent of the cost of the work will be retained and invested as hereinbefore provided.

20. *Guaranty*.—All work under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from date of its acceptance by the commissioners. This date shall be the same as that of the completion of the last street thereunder. Ten per cent of the cost of this work will be retained and disposed of as provided for by law.

It is further expressly understood and agreed that if any of the pavements laid should, for any reason whatsoever, within the period of five years, prove inferior to the best laid in the District prior to July 1, 1904, then the contractor shall, on demand of the commissioners, remove such defective pavements and relay them with new material of approved quality. The Engineer Commissioner shall decide the question of inferiority.

On expiration of guarantee for maintenance the work is to be inspected, and all imperfections must be corrected where and to such extent as the engineer shall direct, upon which the engineer will accept the same in writing, and until such acceptance the guarantee shall be in force. Repairs that may become necessary during the guarantee period will be made by the contractor when ordered by the engineer.

21. *Retain fund*.—The retain fund shall be subject to the control of the Commissioners of the District of Columbia for the purpose of maintaining the work in repair and making good any defects discovered during the period specified, and insuring that the terms of the contract shall be strictly and faithfully performed. In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require of the contractor and his sureties that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

22. *Site of work*.—The bidder is expected to examine the site of work before bidding, as no allowance will be made for any unusual difficulties which may arise, either affecting the original construction or maintenance of the finished work.

23. *Cuts*.—Contractors shall be responsible for any work done upon any street over plumbers' cuts, or other work done by the permission of the commissioners before the work is begun.

24. Certificates of indebtedness against street railway companies will be given to the contractor for all work done and all materials furnished by him for the space which must be paved and kept in repair at the expense of said companies in accordance with existing laws.

25. The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the Engineer Commissioner on the same basis as in case of extra work.

#### SPECIFICATIONS FOR LAYING CEMENT SIDEWALK.

1. *Classes "A" and "B"*.—Work under class "A" will consist of all large work located on streets, avenues, places, etc., within the limits of the city of Washington (including Georgetown or West Washington), and all work on streets, avenues, places, etc., beyond said limits where the roadways are paved. Work under class "B" will consist of all large work located on streets, avenues, places, etc., outside the limits of the city of Washington, as above, where the roadways are not paved, and of all small work wherever located. For classification for purposes of payment under this contract any item of work which exceeds 100 square yards will be rated and paid for as "large work," items of 100 square yards or less being rated as "small work." The aggregate of the item will be the determining consideration since it may consist of two or more detached pieces in the same vicinity. Any questions as to classification under this paragraph will be decided by the Engineer Commissioner.

2. *Grading.*—The contractor is to make such cutting and filling as may be necessary to bring the foundation, when compacted, to the level of 5 inches below the surface of the finished pavement. Grading, either cut or fill, to the needed depth, not exceeding 1 foot on the average for each separate piece of work, and including the area of tree spaces, either continuous or interrupted, must be done without additional or extra charge, inclusive of removal and haul to designated property yard of all sidewalk material between the curb line and the back of the new work, except that of cement or asphalt, whether the old sidewalk is wholly replaced by the new cement or not.

Grading in excess of the 1 foot average depth and removal of old cement or asphalt sidewalk will be paid for as additional work at prices stated herein.

Material for filling must be suitable for the purpose, and satisfactory to the engineer, and must be placed in layers and compacted for making good foundation, as required by him.

In case of excavation, any unsuitable or objectionable material in the bed, as determined by the engineer, is to be wholly removed and the spaces filled with broken stone or other suitable material satisfactory to him.

The contractor is to trim the bed so as to make it parallel to the surface of the finished pavement and thoroughly compact the bed by rolling or ramming without extra pay.

On the bed thus prepared will be laid, after compacting, 4 inches of cement concrete and 1 inch of cement mortar covered by a thin, dry surface coat, all made of the materials and in the manner hereafter described.

3. *Cement.*—The cement used will be a standard brand of Portland cement, uninjured by age or exposure, and delivered at the work in original undamaged packages. The cement shall conform to the current specifications for supplying Portland cement to the engineer department of the District of Columbia. The contractor shall keep the cement in store, under proper cover, in the city of Washington, and shall properly protect it until used. The engineer shall have the right to test the cement as he judges necessary and to reject any or all lots.

4. *Sand.*—The sand used shall be clean and sharp, from fine to coarse, free from sewerage, mud clay, mica, paper, leaves, chips, and other foreign matter, but may show when shaken with water and after subsidence not more than three per cent by volume of silt or loam. Sand used for surface layer must be screened on line of work; screen to be used for this purpose to be designated by the engineer. Sand stored at the work shall, when required, be dumped on boards or other suitable platform and kept as clean as when delivered.

5. *Gravel.*—The gravel shall be from small to medium size and as good in quality as the best Potomac River washed gravel. The gravel shall be free from dust, dirt, chips, leaves, and other foreign or objectionable matter, and when required shall be dumped on boards and cared for as provided for sand in the preceding paragraph.

6. *Mortar and concrete.*—The mortar shall be composed of the cement and sand in the proportion of 1 to 2, by volume, thoroughly mixed dry; a sufficient quantity of water will be added afterwards by fine sprinkling to form, upon remixing, a stiff plastic paste. The proportions are intended to secure a mortar in which every particle of sand is enveloped by cement and all voids in the gravel filled with mortar, and this result must be obtained to the satisfaction of the engineer. If the mixing be by hand, it shall be done on a water-tight platform with tight raised edges, and the cement spread first. No batch shall contain more than 1 barrel of cement.

The mixing shall be done by the use of shovels, hoes, and rakes until a thoroughly uniform mortar of proper consistency as above described is secured.

7. *Concrete.*—To the mortar, made as above directed, shall be added 5 parts by volume of the specified gravel, which shall have been thoroughly drenched with water just before it is added to the mortar. The drenching shall not be done in the barrow, nor otherwise to permit the addition of free water to the mortar. Each batch of concrete shall be thoroughly mixed until each piece of gravel is wholly coated with mortar and in a manner satisfactorily to the engineer. If the mixing be by hand, it shall be done on a water-tight platform, with tight raised edges, and in the mixing the gravel shall be first spread over the mortar. The concrete, immediately after mixing, will be spread upon the foundation so that the mortar shall remain evenly incorporated with the gravel, and then thoroughly compacted by ramming. The slab or flag divisions are then to be marked off to the size and markings cut 3 inches deep. The space made by the cutting tool shall be immediately filled with dry sand and well rammed. Should the contractor so desire he will be permitted to substitute broken stone for the gravel used in concrete. Such stone should be hard, durable, and properly broken to a size small enough to pass through a ring 2 inches in diameter, and may be the run of the crusher, containing not over 1 per cent of material passing a No. 70 sieve. It shall be free from foreign substances, as provided for gravel.

8. *Mortar and surface.*—Mortar for the surface layer shall be made of the specified cement and sand, mixed in the manner as for mortar for concrete, but in the propor-

tion of 2 to 3, by volume. The mortar shall be spread while fresh upon the concrete base while the latter is still soft and adhesive and before it shall have reached its first set, in such quantity that after thorough manipulation it shall be 1 inch in thickness. It is then to be leveled off and beaten with wooden battens, so as to break any air cells and make the surfacing perfectly solid and at the true grade. No pavement marked by sand which has been spread over it for protection will be accepted.

9. *Dry coat.*—A coating of dry cement and fine sand in equal proportions, by volume, and such part and kind of coloring matter as the engineer may direct, thoroughly mixed, is then to be floated into the layer; and by a skillful use of tools the surface is to be made smooth. The joints of the blocks will then be made to a depth of one-half inch immediately over the joints in the concrete base and the blocks brought to a true line and grade and finished without marginal line with trowels to the satisfaction of the engineer. The trowel finish above described will be the rule of the work, but in such cases as may require it for the sake of uniformity with adjacent pavements or other sufficient reasons the use of marginal lines and a rolled finish may be required. The decision as to the finish to be used will be made by the engineer.

Any lack of compaction between the concrete and mortar layers shall be sufficient reason for requiring entire removal and the substitution of new and satisfactory work.

10. *Protection of work.*—The pavement is to be kept moist, protected against the weather, and guarded against foot travel until it has set. Care shall be taken at all times not to interfere with business or travel more than is absolutely necessary for faithful execution of the work. Free ingress and egress from the street to entrances to premises fronting on the sidewalk shall be provided for at all times; and during the time that travel is closed the contractor shall provide a temporary walk and keep it in good condition, safe for pedestrians and easy of access from adjoining walks or roadways. The contractor will not be allowed to obstruct private driveways or approaches, or to dig up or occupy the streets by material more than is absolutely necessary for the prosecution of the work. Special care will be taken to inconvenience the public as little as possible. The contractor will be held responsible for all injury done to the work in any way until it has been accepted and measured by the engineer.

11. *Driveways.*—Driveways shall be laid the same as sidewalks, except that the surface shall be divided into small squares as in K street NW., near Connecticut avenue. The plan of driveways shall be as directed by the engineer.

12. *Tree spaces.*—Tree spaces will be left as directed. These spaces, and also other edges of the work not abutting against curb, poles, or straight lines of parking, terrace, or coping, will be outlined by planed boards of sound pine, 5 inches deep, set on edge to true line, and with top edge even with the pavement surface.

The edges of the new pavement not joining a curb or coping are to be clearly cut down on a true line 1 inch below the finished surface. The edges adjacent to interrupted tree spaces are to be plaster finished. The area of the tree space, either continuous or interrupted, is to be filled with earth up to the level of the pavement.

13. *Plumbing.*—All preliminary plumbing work will be done by the District. The contractor will be held responsible for all plumbing appurtenances within the limits of the finished sidewalk being at its grade, and for any damage or obstruction thereto due to his operation.

14. *Cleaning work.*—Before acceptance of the work it will be cleaned, and all debris and unused material removed. No crumbling or uneven edges of the sidewalk will be allowed to remain. Pine strips at edges of concrete will not be removed before forty-eight hours after the pavement is laid.

15. *Inspection of work.*—The engineer will appoint an inspector to see that each piece of the work, including curb work, is graded and laid according to specifications and directions. The District will not pay for any work done during the absence of the inspector.

16. *Additional work.*—Contractors must do such additional work incident to the construction of new pavements as may be ordered on each street by the engineer commissioner. All such work shall be in accordance with current District specifications. Prices paid for this work will be as stated below:

Removing old curb, including hauling to property yard, 8 cents per linear foot.

Hauling same beyond distance to nearest property yard, 1 cent per linear foot per mile.

Removing old rubble, cobble, flagging, stone and brick, asphalt block, etc., including haul to the property yard, 15 cents per square yard.

Removing old granite block, including haul to property yard, 25 cents per square yard.

Hauling same beyond distance to nearest property yard, 1 cent per square yard per quarter mile or fraction thereof.

Grading or hauling earth, not to exceed 1,000 feet, 45 cents per cubic yard.

Grading and hauling macadam, not to exceed 1,000 feet, 55 cents per cubic yard.

Removing old coal-tar and bituminous base and hauling, not to exceed 1,000 feet, 85 cents per cubic yard.

Removing old asphalt and cement sidewalk pavement and hauling, not to exceed 1,000 feet, 85 cents per cubic yard.

Removing old concrete base and hauling, not to exceed 1,000 feet, \$1.50 per cubic yard.

Hauling excavated material, per 100 feet over first 1,000 feet, three-quarters of a cent per cubic yard.

Hauling from District property yard and setting bluestone and 6 by 20 inch curb, class A, 20 cents per linear foot.

Hauling from District property yard and setting bluestone and 6 by 20 inch curb, class B, 23 cents per linear foot.

Hauling from District property yard and setting 8 by 8 inch curb, class A, 32 cents per linear foot.

Hauling from District property yard and setting 8 by 8 inch curb, class B, 35 cents per linear foot.

Resetting 6 by 20 inch bluestone curb, 20 cents per linear foot.

Resetting 8 by 8 inch curb on old concrete base, 15 cents per linear foot.

Relaying vitrified brick or block on old concrete base, 60 cents per square yard.

Laying asphaltic or bituminous broken-stone base in place, \$3 per cubic yard.

Laying and relaying asphalt and vitrified block on gravel base, 40 cents per square yard.

Adjusting manhole tops and basin covers to grade, \$2 each.

Laying and relaying granite block, 75 cents per square yard.

Portland cement concrete base as specified herein, \$6 per cubic yard.

Relaying cobble and rubble, 30 cents per square yard.

Dressing, joining, and cutting curb, etc. (stonecutters' time), including setting-up labor, 65 cents per hour.

Repairing brick sidewalks, 25 cents per square yard.

Adjusting electric-light manholes to grade, as follows:

(a) Size 14 by 14 inches, 75 cents each.

(b) Size 18 by 15 inches, \$1 each.

(c) Size 36 by 26 inches, \$1.50 each.

(d) Size 6 by 6 feet, \$4 each.

Resetting 8 by 8 inch curb on new concrete base, including removal of old concrete base, 31 cents per linear foot.

Repairing cuts, etc., in cement walks when specifically ordered in writing under this paragraph, \$1.70 per square yard.

The last item of additional work consists in all necessary repairs to cuts in cement walks made by individuals, corporations, or by employees or agents of the District of Columbia when such repairs are specifically ordered to be made in writing. Such repairs are to be made within fifteen days after receipt of such written notice in strict conformity with the within specifications. The payment therefor will be made monthly and no retent will be held on this class of work. The last three years' experience shows an annual aggregate of about 3,500 square yards of such cuts. Failure on the part of the contractor to make any such repair within fifteen days may be authority for the execution of all subsequent work of this class by the District of Columbia, and any excess cost above the contract rate thereby resulting will be charged against the contractor and deducted from any money due or to become due him.

The repaving of all roadway pavements necessarily disturbed in setting or resetting curb will be done by the District without cost to the contractor.

The setting and resetting of the curb shall be done according to current District of Columbia specifications for such work.

All additional or extra work, not herein specified, is to be paid for at current contract rates for work of a similar character, or if the extra work should be of a class which no rate is fixed by current contracts, at actual reasonable cost of labor and materials, plus 15 per cent.

The old curb may be removed and reset to grade and line, or the old curb may be straightened and leveled without removing it from place, as required by the engineer.

17. Existing brick walks abutting the ends of new cement walks are to be relaid, if necessary, without cost to the District, in such manner as to make them conform to the grade, etc., of the new walks in a manner satisfactory to the engineer.

18. *Amount of work.*—The work to be done under this contract consists in laying cement sidewalks in such places and in such order as may be directed by the commissioners under appropriations for the fiscal year 1911. The amount of work to be done under this contract can not be stated with any precision, but as an indication of what is anticipated the amount of the contractor's bond will be determined on the basis of 70,000 square yards. No guaranty is given that the quantity here stated

will be equalled or may not be exceeded. The bids will be classified and award of contract based on 60,000 square yards of class A and 10,000 square yards of class B.

19. *Bond*.—Good and sufficient bond in a penal sum which shall in no case be less than one-quarter of the estimated amount of the contract, with sureties or a surety company satisfactory to the commissioners, will be required from all contractors, guaranteeing that their contract will be faithfully performed; that the contractor or contractors will be responsible for all claims for damages to persons, property, or premises arising out of his or their operations prior to the acceptance of the finished work, and that he or they will promptly make payments to all persons supplying him or them with labor and materials in the prosecution of the work provided for in the contract.

20. *Payment*.—Payments will be made monthly, provided the progress of the work is satisfactory, less 10 per cent of each estimate to be withheld until final payment; but 10 per cent of the cost of the work will be retained and invested as herein provided.

21. *Guaranty*.—All work done under this contract will be guaranteed and kept in repair by the contractor without cost to the District for a period of five years from the date of its acceptance by the commissioners. This date shall be the same as that of the final voucher. Ten per cent of the cost of this work will be retained and disposed of as provided for by law.

On expiration of guaranty for maintenance the work is to be inspected, and all imperfections must be corrected where and to such extent as the engineer shall direct, upon which the engineer will accept the same in writing, and until such acceptance the guaranty shall be in force.

22. *Retain fund*.—The retain fund shall be subject to the control of the Commissioners of the District of Columbia for the purposes provided by law and for the purpose of maintaining the work in repair and making good any defects discovered during the period specified.

In the event of the contractor failing to make such necessary repairs after notice to do so the commissioners may cause such work to be done and deduct the cost of the same from the retain fund, and, in their discretion, may require the contractor and his sureties that any portion of the said retain fund which may have been expended for the maintenance of the work shall be made good by further deposit.

23. *Cuts*.—Contractors shall be responsible for any work done upon any street over plumbers' cuts or other work done by the permission of the commissioners before the work is begun.

The commissioners reserve the right to modify these specifications as may from time to time seem desirable. The amount of compensation, if any, due the contractor for said modifications will be determined by the engineer commissioner on the same basis as in the case of extra work.

### SPECIFICATIONS FOR CONSTRUCTION OF SEWERS.

1. *Description and location of work*.—

2. *Bids*.—The contractor shall, for the price or prices bid, do all the work prescribed in these specifications; make the requisite excavations for building the sewer and the appertaining structures and connections; shall do all ditching, diking, pumping, bailing, and draining, all sheeting, bracing, and shoring; shall make all provisions necessary to maintain and protect adjacent buildings, fences, trees, gas pipes, water courses, conduits, culverts, sewers, railways, electric lines, and other structures, and shall repair all damages to the same which may result from his operations; shall provide all bridges, fences, or other means of maintaining and protecting travel on intersected streets, roads, and railroads, and on streets or roads in which the trenches are excavated, after giving due notice to parties affected thereby; shall maintain the same in good and safe condition so long as may be necessary, and shall then remove such temporary expedients and restore such ways to their proper condition; shall provide watchmen, red lights, fences, and all other precautionary measures necessary to the protection of persons and property; shall provide all necessary centers, molds, and forms; shall construct all foundations, all brick, concrete, stone, and timber work; shall set in place all ironwork, and refill all trenches; shall furnish all materials (except those specially mentioned in par. 5) and all tools, implements, labor, and transportation required to build and put the sewer in complete working order; and shall do each and all to the satisfaction of the engineer.

For lumber left in trench no payment shall be allowed, unless the same shall be specifically directed by the engineer prior to the refilling of the trench. The contractor ordinarily will use his judgment about leaving bracing lumber in place, but shall be in all cases responsible for any injury which may result to the sewer or to adjacent pavements, structures, water, gas, or other conduits by the removal of bracing, sheeting, or shoring.

3. *Drawings.*—The drawings which illustrate the work to be performed and which show the location, shapes, dimensions, and materials of the sewer to be constructed are on file in the engineer department. All work executed under this contract must conform with these drawings.

Should the position of pipes and other underground objects be found to differ from that indicated on the drawings, or if it shall be found necessary to modify the lines, grades, or positions, the contractor shall have no claim for extra compensation on that account.

4. *Street occupancy and traffic.*—The operations of the sewer contractor must be so conducted that traffic upon steam and street railways and ordinary street traffic may be maintained. All material excavated must be removed from the street or deposited as back filling upon completed work.

5. *Materials.*—The contractor will be furnished at the District property yards with all the necessary sewer pipes, manhole steps, and ordinary cast-iron manhole tops, with covers, the value of which material, actually used in the work, will not be charged against him. He will also be furnished at the District yards with all the cements, vitrified bricks, and invert blocks required for the work, the value of which will be charged against him at the following rates: Portland cements, \$1.50 per barrel; invert brick, \$18 per thousand; vitrified invert blocks, \$0.50 per linear foot.

Should cement be furnished in bags, the bags will be returned by the contractor or charged against him at the rate of \$0.11 each.

The contractor shall convey materials from the points where they are delivered by the commissioners and store the same in the vicinity of the works. He shall be responsible for the loss incurred or damage done to said materials from the time of their delivery until the work is accepted. No materials shall be applied to other use than that for which they are issued.

The materials from the trenches and those used in constructing the sewer appurtenances shall be so deposited as not to hinder nor endanger public travel, and so that free access may be had at all times to all fire plugs, water gates, manholes, and catch basins in the vicinity of the work.

6. *Samples.*—The bricks used upon the work must be equal in quality to the sample bricks in the office of the superintendent of sewers.

7. *Order.*—The work shall be prosecuted in such order as the engineer shall direct. He shall determine whether the conditions are favorable for working and may suspend the work or any portion of it whenever, in his opinion, the conditions are such as will not insure first-class construction.

8. *Measurement.*—Measurements of work shall be made as follows:

Length: The length of sewer paid for by length and the length of excavation shall be the whole length of the completed sewer without deduction for the space occupied by manholes.

Width: The width of the trench at any cross section shall be considered as equal to the greatest horizontal diameter of the sewer at that cross section, including the walls thereof, with 9 inches added thereto.

Depth: The depth at any cross section shall be considered as equal to the mean depth from the surface to the outside bottom of the sewer at that section.

In submitting proposals bidders will be guided by the profiles given upon the drawings. These are approximate and any variance therefrom shall not be the basis of any claim for compensation above that provided for in the contract rates.

9. *Foremen.*—The contractor shall employ capable superintendents or foremen to represent him on the work, and they shall receive and obey orders from the engineer.

10. *Mechanics.*—The foremen, mechanics, and others employed by the contractor shall be skilled in the several parts which are given them to do.

11. *Obstacles.*—The prices bid to include the cost of the removal of and delay or damages occasioned by trees, roots, timber, or masonry structures or other obstacles (whether shown on the plans or not) except rock.

12. *Pavements.*—All pavements disturbed in doing sewer work for the width of the trenches and defined in section 8 of these specifications will be relaid by the commissioners. The contractor shall, without cost to the District, haul all cobble, rubble, bricks, blocks, and tiles taken up by him to a property yard to be designated by the engineer and take receipt therefor. Macadam, hydraulic base, and sheet pavement material removed shall be piled in suitable places along the line of the work so as not to cause unnecessary obstruction of any kind, and during the progress of the work shall be guarded by the contractor against misappropriation. Whenever so ordered by the engineer the contractor shall haul this material to a property yard to be designated by the engineer. No paving material of any kind removed in making excavation shall be used or appropriated by the contractor without written permission from the engineer.



If any pavement be injured by the contractor outside the limits prescribed by the trenches, the cost of restoring such excess shall be charged against him and deducted from any amount found due him. He will maintain the surface over the line of the trench up to the street grade with the best material obtainable from the excavation until such time as the pavement is relaid. The cost of subsequent repairs of all pavements relaid over or adjacent to sewer trenches on account of sewer work or of any work made necessary within the period of one year for which the sewer and their appurtenances are guaranteed, by settlement of the back filling of the trenches, will be charged against the 10 per cent retained and invested as provided in paragraph 9 of the instructions to bidders.

13. *Private property.*—Care shall be taken not to move, without the consent of the person owning or controlling them, any trees, fences, water or gas pipes, sewers, drains, conduits, poles or wires for electrical purposes, railways, or other structures, and in crossing or working near them they shall be sustained securely in place until the work is completed and shall be so treated as to render their condition as efficient and permanent as before.

In sewer construction along a right of way through public or private property the contractor shall so conduct his work as not to damage said property, and so as to interfere with its ordinary use as little as possible; he shall, upon completion of the sewer, restore the surface as nearly as possible to the condition in which he found it. No material shall be used or removed from the premises without the consent of the owner or responsible party in charge of the property.

14. *Trenches.*—The ground shall be excavated in open trenches to such width and depth as may be necessary for proper sewer construction. If, however, in the judgment of the engineer commissioner, it is deemed advisable, special permission may be given for the construction of portions of the work in tunnel, in which case excavation will be allowed as if construction were in open trench. But at any time during such construction the engineer commissioner may direct the excavation to be made in open trench.

The utmost care shall be taken to spare the roots of shade trees and to protect trees and shrubbery in public parks adjacent to line of work from injury. Also care must be taken to avoid unnecessary damages to park surfaces and roadways during construction.

Whenever it is necessary to intercept work near or in any way interfere with any public or house sewer, drain, pipe, catch-basin, culvert, or other similar structure the contractor shall maintain the same working order and shall repair and make good any damage done to or by any of them during the progress of the work.

During construction, permission may be secured to substitute for any sewer in use which is affected by the work hereby contracted for, a drain upon an approved location of equal capacity and of substantial construction, subject in all particulars to the approval of the engineer commissioner.

The portion of the trench below the springing line of the sewer shall be excavated to conform to the external form and dimensions of the same. If the character of the ground met with in excavating is such that the external form of the sewer can not be preserved, the excavation shall be made to conform as nearly as possible to the external shape and dimensions of the sewer, and the space between the external sewer lines and the bottom and sides of the excavation as made, for a width equal to the outside horizontal diameter of the sewer at the springing line, shall be filled with hydraulic cements, concrete, or brick masonry, as directed.

15. *Rock.*—Only such ledge or rock as in the opinion of the engineer requires blasting for its removal, or bowlders of one-half cubic yard or more in volume which are removed from the trench, will be estimated as rock excavation. Before beginning rock excavation the contractor must procure a written order from the engineer. All excavated material shall be considered and classed as ordinary excavation, except rock removed by special orders as above. Indurated gravel, loose or disintegrated rock, and materials of like character, in the opinion of the engineer commissioner, will not be classed as rock.

For rock excavated from trench \$3 per cubic yard will be allowed the contractor and excavation classified as rock will not be included also as ordinary excavation.

16. *Blasting.*—Before blasting the contractor must procure a written order from the engineer.

Blasts shall be covered with heavy timbers chained together. Caps or other explosives shall in no case be kept in the same place in which dynamite or other explosives are stored; and, in general, the precaution against accidents from blasting shall be entirely satisfactory to the engineer. The contractor shall be liable for all damages to persons or property caused by blasts or explosives.



17. *Foundations.*—If the material found in the sewer trench be, in the opinion of the engineer, unsuitable for a foundation, upon receipt of a written order it shall be removed by the contractor to such depth and width as may be directed, and suitable material shall be deposited in its place. This additional excavation and deposited material will be paid for as extra work.

18. *Connections.*—Connections with existing sewers shall be made by the contractor according to directions given by the engineer. The right to permit the connection of any public or house sewer with a sewer under construction before completion of the latter is expressly reserved to the commissioners.

19. *Water-tight work.*—Water-tight work is required in all construction.

20. *Bricks.*—Bricks used shall be of the best quality of whole new bricks, of uniform size, compact texture, burned hard and entirely through, with true surface, free from injurious cracks and flaws, tough and strong, and having a clear ring when struck together. They must have a crushing strength of not less than 4,500 pounds per square inch, and must not absorb more than 10 per cent of their weight of water after having been thoroughly dried and then immersed for twenty-four hours in water. Samples will be subject to such tests as may be satisfactory to the engineer.

The truest and smoothest bricks will be used in the face of the masonry. All bricks delivered for use shall be culled by the contractor when required. No bricks rejected in the culling shall be used in any work done under this contract.

21. *Broken stone.*—Broken stone for concrete masonry must be hard and of durable character, the run of the crusher, and it shall not contain more than 1 per cent of materials passing a No. 10 sieve. It shall be thoroughly cleansed from all foreign substances, and, if so ordered by the engineer, it shall be screened and washed. Detritus or any material other than hard angular fragments of stone shall be considered a foreign substance. Every piece of stone for concrete masonry must be small enough in largest dimension to pass through a ring 2 inches in diameter.

22. *Pebbles.*—Pebbles shall be from fine bank or river gravel, thoroughly screened, free from earthy or other foreign matter, and small enough to pass through a ring 1½ inches in diameter, and shall not contain more than 5 per cent of material which shall pass through a No. 10 sieve.

23. *Sand.*—Sand for masonry shall be clean, sharp sand, containing both fine and coarse grains, free from mud, sewage, mica, or other foreign matter, at least equal in desirable qualities to the samples in the property office, District of Columbia, marked "Sample of sand for paving and concrete," and "Sample of sand for brickwork and plastering," respectively.

24. *Water.*—Water used for mortar and concrete shall be fresh and clean, free from earth, dirt, or sewage, and shall be used in such quantity as the engineer may direct.

25. *Platforms.*—Platforms shall be provided upon which all sand and broken stone shall be placed when brought upon the line of the work and there kept until used.

26. *Mortar boxes.*—Tight mortar boxes shall be provided by the contractor, and no mortar shall be made otherwise than in such boxes except for concrete. No deposits of sand or mixing of mortar will be permitted upon pavements.

27. *Mortar.*—Mortar used in this work shall be composed of Portland cement in perfect condition and loose, dry sand in the proportion of one barrel of cement weighing (net) 380 pounds and 9 cubic feet of sand, thoroughly mixed dry, and a sufficient quantity of water afterwards added to make a rather stiff paste. It shall be used within an hour after the addition of the water, but no mortar shall be used after having become hard or set.

28. *Mixing mortar.*—The thorough mixing and incorporation of all materials will be insisted upon. If done by hand labor, the dry cement and sand shall be turned over and mixed with shovels by skilled workmen not less than six times before the water is added.

29. *Concrete masonry.*—Concrete masonry will be classified as follows:

Concrete masonry "A" will be composed of—

- 1 barrel Portland cement (net weight 380 pounds).
- 8 cubic feet sand.
- 8 cubic feet broken stone.
- 8 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "B" will be composed of—

- 1 barrel Portland cement (net weight 380 pounds).
- 10 cubic feet sand.
- 10 cubic feet broken stone.
- 10 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "C" will be composed of—

- 1 barrel Portland cement (net weight 380 pounds).
- 12 cubic feet sand.
- 12 cubic feet broken stone.
- 12 cubic feet pebbles.

Water as directed by the engineer.

Concrete masonry "D" will be composed of—

- 1 barrel Portland cement (net weight 380 pounds).
- 10 cubic feet sand.
- 20 cubic feet pebbles.

Water as directed by the engineer.

Suitable appliances, satisfactory to the engineer, for measuring the ingredients for each batch of concrete shall be kept on the line of the work.

30. *Mixing concrete.*—The thorough mixing and incorporation of all materials will be required. If done by hand labor, the dry cement and sand shall be mixed and turned over by skilled workmen with shovels not less than six times before the water is added; the stone, after being wetted, shall be added to the mixed cement, sand, and water. The whole mass shall then be thoroughly turned over by skilled workmen, with shovels, not less than four times, until every particle of stone is completely enveloped with mortar. The whole operation of mixing and laying each batch shall be performed as expeditiously as possible by the aid of machinery or a sufficient number of skilled men.

31. *Setting.*—Concrete shall not be used after it has begun to show evidences of setting. No concrete which has once set shall be used as metal for mixing a new batch.

32. *Placing.*—The concrete shall not be thrown or dumped from a height, but must be lowered in a vessel and so carefully deposited as to retain the constituents evenly incorporated as mixed, entirely free from foreign matter of any kind.

33. *Ramming.*—Each batch of concrete shall be spread in place in horizontal layers not exceeding 5 inches in thickness before ramming, and shall be at once thoroughly compacted by ramming.

34. *Water.*—No concrete or other work shall be laid in water, and no water shall be thrown upon or allowed to flow over or rise upon masonry until the mortar has had ample time to become set.

35. *Molds, etc.*—Strong molds, forms, and centers, satisfactory to the engineer, made to fit the curves and shapes of all work done under this contract shall be provided by the contractor for each stage and section of the work, and when they lose their proper dimensions or shape they shall be replaced by others. Planking forming the faces of all exposed walls shall be so matched and placed as to give an even and uniform surface to the concrete. Before being used the molds shall be scraped clean from cement and dirt. Their setting up, striking, and general management shall conform to directions given by the engineer. For concrete inverts, where brick lining is omitted, sheet steel collapsible forms must be used. All work must be specially smooth and well filled, and no plastering will be allowed.

36. *Invert blocks.*—Invert blocks shall be laid true to line and grade. A concrete bed of the required shape and dimensions shall first be prepared, and a layer of mortar one-half inch thick spread upon this bed. Upon this coat of mortar the blocks shall be laid, and each block shall be carefully pressed down and bedded upon the mortar, so as to insure a close contact throughout the bottom and back of surface of the blocks. The joints between consecutive blocks shall be full mortar joints and as close as practicable.

37. *Vitrified bricks.*—Each course of vitrified invert bricks shall be laid in full mortar joints truly on line, and the joints upon the face of the work shall not exceed three-sixteenth inch in thickness.

38. *Brickwork.*—Bricks must be thoroughly wet by immersion immediately before laying. Every course shall be laid with a line. Every brick must be thoroughly laid in full mortar joints on bottom, side, and end, which for each brick must be formed by one operation. In no case is the joint to be made by grouting or by working in mortar after laying the brick. No joint shall exceed three-eighths inch in thickness. All joints on faces shall be trowel struck.

39. *Bonding.*—Brick masonry of sides and arches shall be bonded and keyed as directed, especial care being exercised with each ring against laying too large joints at the back. All joints shall be normal to the section of the sewer and all "lapping" of brick must be carefully avoided.

40. *Bedding.*—Brick masonry below the springing line in brick sewers must be well and firmly bedded upon the foundation prepared for it or upon the wall of the adjacent

excavation, as the case may be; and all spaces which would otherwise exist between the outer lines of the sewer and the walls of the foundation or excavation must be filled with hydraulic cement mortar, concrete, or brick masonry, as may be directed.

All unfinished brick masonry must be "racked back" or toothed, as may be directed, and when new work is joined to the unfinished portion the latter must be thoroughly cleansed.

41. *Arches*.—Concrete arches shall be allowed to set at least twenty-four hours before any back filling or other weight shall be put upon them, and no walking or working thereon shall be allowed during said time.

42. *Plastering*.—As soon as practicable after the "keying up" is completed the back of every arch of brick or concrete shall be thoroughly cleaned of dirt and loose or projecting mortar and shall then be smoothly plastered, from the springing line to the crown, with a coat of mortar three-eighths inch thick; the work to be done by skilled workmen, using tools satisfactory to the engineer. This coat shall be allowed to become fully set before any back filling is placed or walking allowed upon it.

43. *Piling*.—Piles are to be not less than 8 inches in diameter at the small end, of live timber, sound, straight, and free from rot, large knots, wind shakes, and all other defects. They may be of pine, spruce, white oak, or such other durable timber as the engineer commissioner may approve. They are to be well and carefully driven with small end down, plumb and true to position, by a heavy hammer, delivering blows in rapid succession, to a penetration under the last blow of one-half inch for a hammer weighing 2,000 pounds falling 12 feet.

Each pile shall be stripped of bark, have all knots pared smooth, and shall have the lower end squared or pointed before the driving, as may be directed.

After driving, the pile shall be cut off so as to form a true and even bearing for the cap timber, which shall be fastened to each pile by a 2-inch tree nail of white oak, Georgia or Florida pine, or hickory, or a 1-inch drift bolt driven through the cap and 10 inches into the head of the pile. Any pile split or otherwise injured in driving or driven out of position will be replaced by a sound one in true position. The top of any pile shall not be drawn over more than 9 inches after driving to allow capping. Any pile which is driven a greater distance from its true position than 9 inches, or whose penetration exceeds one-half inch under the last blow, will be rejected, and must be replaced by a pile driven adjacent thereto, as directed by the engineer. While being driven, should a pile head become broomed or otherwise injured so as to prevent effective driving, the top shall be sawed off as directed. When necessary, in the judgment of the engineer, each pile shall be bound, while driving, with a strong iron band, of a proper size to protect pile head. In all cases the pile must refuse for the penetration specified, with the top sufficiently above subgrade to permit cutting off all that portion of the piles split or otherwise injured in any way by the process of driving, when the pile is sawed off at subgrade. In no case will the use of a "follower" be permitted. The piles must be carefully sawed off by a horizontal cut at the required grade line. For piles rejected for any cause whatever no allowance will be made.

44. *Lumber*.—All lumber for use in the completed structure must be sound, straight-grained, and free from sap, loose or rotten knots, wind shakes, or any other defect which would tend to impair its strength or durability; must be straight, of the dimensions given, with square edges, and uniform width and thickness throughout each piece. Each floor plank must be secured to each cap timber upon which it rests by two 6-inch spikes. All framing must be done in a thorough, workmanlike manner, and both material and workmanship will be subject to the inspection and approval of the engineer commissioner.

45. *Bracing*.—When, in the opinion of the engineer, it is necessary to protect the masonry from injury, the sewer shall be braced inside, without any additional charge. The bracing shall be done in a manner satisfactory to the engineer and it shall be left in place until he shall direct its removal.

46. *Dirt*.—In lowering material into the trenches care should be taken not to throw dirt upon freshly laid concrete or other masonry in place. At all stages and for all classes of work concrete and mortar must be kept as free as possible from dirt of every kind, and, if unavoidably mixed with dirt, shall be removed and replaced to the satisfaction of the engineer.

47. *Backfilling*.—The backfilling must be brought up evenly on both sides of the sewer with the best material from the excavation, so that no unbalanced pressure shall be brought upon the masonry. It shall be spread in horizontal layers not exceeding 6 inches in depth before ramming, and thoroughly rammed to the top of the trench. No less than two men shall be employed in ramming for each shoveler engaged in replacing the backfilling, which shall be compacted with iron-shod rammers, each weighing not less than 12 pounds. When the backfilling is deposited

by means of wheelbarrows, carts or wagons, or by machinery, the ramming shall be done as directed by the engineer.

All sides or caving of sides of the trenches or cuts shall be taken out and backfilled by the contractor.

As the trench is refilled, the bracing, etc., shall be removed in such manner as to prevent the caving of the sides of the trench. If sheeting is used, so much of it as extends below the crown of the arch of the basin must be withdrawn, unless otherwise directed by the engineer, after refilling over the haunches, but before more than 6 inches of earth is placed on the crown of arch, and before the center is struck. As the sheet planks are withdrawn the vacancies left by each shall be carefully refilled by ramming with tools especially adapted for the purpose, by watering or otherwise, as may be directed.

48. *Manholes*.—Brick manholes of the form shown on the drawing shall be constructed in the sewers wherever ordered by the engineer.

49. *Steps*.—Each manhole shall have steps of wrought iron  $\frac{3}{4}$  inch in diameter, built into brickwork, as shown on the drawings. Similar steps shall be built into the inverts of the sewers at the manholes as the brickwork progresses, as may be directed.

50. *Manhole tops*.—The contractor shall carefully and securely fit each manhole with a cast-iron frame and cover, as shown in the drawings.

In sewers of greater span than 3 feet, the manholes shall spring from one side of the arch; in sewers having a span of 3 feet or less, the axis of the manholes shall be directly over the center of the sewer.

Connections for public and house sewers and catch-basins shall be built into the manholes wherever required.

51. *Sewer pipe*.—Sewer pipe will be of the ring or plain cylindrical pattern.

52. *Laying*.—Laying pipe sewer shall be executed in the following manner: The trench shall first be excavated by the use of the prescribed form to the required depth, shape, and dimensions; concrete shall then be compactly rammed in the bottom to the required depth, and its upper surface brought to a plane lower than the grade of the sewer by the thickness of the wall of the pipe. The pipe must be perfectly supported throughout its entire length upon its concrete bed; bringing the pipe to grade by means of stone, pieces of band, etc., will not be permitted. Concrete shall then be rammed upon the sides and haunches of the pipe to the full specified width and thickness, care being taken that no void spaces exist. The greatest care must be exercised that the alignment and grade of the pipes be not disturbed. The joints between the pipes shall be closed by pointing with stiff mortar, after which a layer of concrete shall be carried over them to a thickness of not less than 4 inches at any point, and having bottom and top widths of not less than 12 inches and 14 inches. During the suspension of the work at night or at other times a suitable stopper shall be placed in the last pipe laid to prevent earth from washing in. No sand, mud, mortar, concrete, or other material shall be allowed on the inside of pipe sewers. Upon completion they must be left straight, clean, smooth, and in every other respect acceptable. Mortar and concrete shall be allowed to set before any backfilling is placed or walking is allowed upon the sewer, and the greatest care must be taken not to disturb the pipes, haunching, and banding.

53. *Replacing*.—When necessary to pump sewage in replacing and laying relief sewers, the material pumped shall be carried by means of hose or other water-tight conveyor to the sewer or manhole designated by the engineer, and it shall not be allowed to flow into or over the surface.

54. *Inspection*.—The contractor shall, when requested, provide the engineer with such ladders, lanterns, tools, and labor samples, and other facilities as may be necessary for inspecting materials and work.

Imperfect materials or work which may be discovered shall be replaced or corrected immediately on the requirement of the engineer, notwithstanding that it may have been overlooked by the proper inspector, and included in a partial payment. Materials condemned or rejected by the engineer may be branded or otherwise marked, and shall on his demand be at once removed to a satisfactory distance from the work. Any omission to disapprove the work at the time of inspection, or at the time of any monthly or other estimate, shall not relieve the contractor of any of his obligations, and all work, of whatever kind, which during its progress and before it is finally accepted may become damaged or prove unacceptable for any cause, shall be removed by the contractor and replaced by good and satisfactory work. If not removed within twenty-four hours after written notice from the engineer, it shall be moved by that officer and the cost charged to the contractor and deducted from any amount due or which may become due him.

## FORMS ACCOMPANYING ALL SPECIFICATIONS.

## INSTRUCTIONS TO BIDDERS.

These instructions will become a part of the contract.

1. *Signature.*—Proposals must be signed by the bidder with his signature in full. When a firm is a bidder, the agent who signs the firm name to the proposal shall state, in addition, the names of the individuals composing the firm. When a corporation is a bidder, the person signing shall state under the laws of what State the corporation was chartered, and the name and title of the officer having authority under the by-laws to sign contracts. The proposal shall also bear the seal of the corporation, attested by its secretary. Any one signing the proposal as agent must file with it legal evidence of his authority to do so.

2. *Address.*—Post-office address, county and State, of the bidder must be written or printed after the signature, and such address is the one, in the absence of written directions to the contrary, to which notice of the award of contract may be mailed or delivered, but the said notice may be served on the bidder or any agent of the bidder.

3. *Prices.*—All prices must be written in words as well as expressed in figures. In case of variation the written prices shall govern.

4. *Identification of proposal.*—Proposals will be placed in a sealed envelope, so marked as to indicate its contents without being opened. This envelope will be placed in another addressed to the Commissioners of the District of Columbia, Washington, D. C.; if forwarded otherwise than by mail it must be delivered to the secretary to the board of commissioners.

5. *Rejection of bids.*—Reasonable grounds for supposing that any bidder is interested in more than one proposal for the same item will cause the rejection of all proposals in which he is interested. The commissioners reserve the right to waive any informality in the proposals received, and to reject any or all proposals, or parts of a proposal, and to make the award in such manner as they consider best for the interests of the District of Columbia. Proposals received after the time advertised for opening bids will be returned unopened. No proposal will be accepted from any failing bidder or contractor known as such on the records of the District of Columbia for twenty years prior to date of bid.

6. *Experience.*—Bidders must present satisfactory evidence that they have been regularly engaged in the business of constructing such work as they propose to execute, and in case the lowest responsible bidder has never done any work for the District of Columbia, he must, prior to the award of contract, be able to show work done by him within a distance of one thousand miles from the District of Columbia, and may be required to pay the necessary expenses of an inspection of such work by such representatives of the District of Columbia, not exceeding two in number, as may be sent by the engineer to examine it.

7. *Capital and plant.*—Bidders must present satisfactory evidence that they are fully prepared with the necessary capital, materials, and machinery to conduct the work to be contracted for to the satisfaction of the commissioners, and to begin it promptly when ordered.

8. *Guaranty deposit.*—Bidders will inclose a receipt of the collector of taxes of the District of Columbia for the amount named in the form of proposal. This amount will be held as a guarantee of good faith, and as reasonable, fixed, and liquidated damage, and not as a penalty, to the District of Columbia, and which they agree to forfeit in the event of their failure to enter into contract, with good and sufficient sureties, within ten days after notification of acceptance of their proposal.

9. *Laws affecting public work.*—The attention of bidders is invited to the "act regulating retents on contracts with the District of Columbia, approved March 31, 1906."

"That on all contracts made by the District of Columbia for construction work there shall be held a retent of ten per centum of the cost of such construction work as a guaranty fund to keep the work done such contracts in repair, and that the terms of such contracts shall be strictly and faithfully performed. On contracts for the construction of asphalt, tar, brick, cement, or stone pavements the retent shall be held for a term of five years from the date of completion of the contract. On contracts for the construction of bridges and sewers the retent shall be held for a period of one year from date of completion of contract. On contracts for the construction of buildings, and other contracts for construction work, the retent shall be held until the completion of the work. All retents for one year or more shall be deposited with the Treasurer of the United States as now required by law."

Also the following clause of the act of March 3, 1887:

"That the Treasurer of the United States, as commissioner of the sinking fund of the District of Columbia, shall not be compelled hereafter to invest money retained

from District contracts hereafter entered into; but may, in his discretion, retain said funds without interest, or invest the same in any class of United States or District of Columbia bonds, at the request and at the risk of the contractor, whenever the sum retained on any contract shall reach the sum of one hundred dollars or more; any sum less than one hundred dollars shall be retained without interest as above."

Also to Public Act No. 82, approved February 28, 1899, relative to payment of claims for material and labor furnished for District of Columbia buildings, and to the public act relating to the limitation of the hours of daily service of laborers and mechanics upon the public works of the United States and the District of Columbia.

All laws and regulations of the United States and of the District of Columbia, especially in so far as they relate to the protection of life and property, are to be strictly observed.

10. *Breach*.—No waiver of any breach of the contract shall constitute a waiver of any subsequent breach of any part thereof, nor of the contract.

11. *Return of deposits*.—Bidders' deposits will be returned on application to the chief clerk, engineer department, to unsuccessful bidders after award of contract is made, and to successful bidders after execution of contract.

12. *Sundays or legal national holidays*.—No work shall be done on Sundays or legal national holidays except in cases of emergency, and then only with the consent of the engineer, nor shall any work be done at night unless authorized in writing by the engineer.

13. *Changes*.—Changes, alterations, or interlineations must be explained by footnote in proposal.

14. *Withdrawal*.—If a bidder wishes to withdraw his proposal, he may do so before the time fixed for the opening, without prejudice to himself, by communicating his purpose in writing to the secretary to the board of commissioners, and when reached it will be handed to him or to his authorized agent unread.

#### GENERAL STIPULATIONS.

1. These stipulations are a part of the specifications.

2. *Transfers*.—No contract or any interest therein shall be transferred by the parties to whom the award is made; such transfers will be null and void, and will cause the contract to be annulled and the work to be given to other parties under the conditions mentioned herein.

3. *Patents*.—The contractor will be required to hold the District of Columbia harmless against all claims for the use of any patented article, process, or appliance in connection with the contract herein contemplated.

4. *Contractor's risk*.—All loss or damage due to negligence, or arising out of the nature of the work to be done, or from any unforeseen or unusual obstructions or difficulties which may be encountered in the prosecution of the same, or from the action of the elements, will be sustained by the contractor.

5. *Employees*.—The contractor shall employ capable superintendents or foremen to represent him on the work, and they shall receive and obey orders from the engineer. He shall so conduct his operations as to interfere with the work of other District contractors as little as possible. The foremen, mechanics, and others employed by the contractor shall be skilled in the several parts which are given them to do.

An employee or agent of the contractor who shall use profane or abusive language to the inspector, or otherwise impede or embarrass him in the performance of his duty, or who, in the opinion of the engineer, is careless or incompetent, or obstructs the progress of the work, or disobeys or evades the instructions given by the engineer, shall be immediately discharged and not again employed without the consent of the engineer.

6. *Weather*.—The contractor shall suspend all work under the contract when notified by the engineer that the weather is unsuitable for carrying it on.

If work is allowed during cold or freezing weather, the contractor shall take such additional precautions as the engineer shall require, without additional expense, and under no circumstances shall materials be used which have been injured by the weather.

7. *Inspection*.—Inspectors may be appointed who shall have access to all parts of the work at all times, and whose duty it shall be to point out to the contractors any neglect or disregard of the specifications of contract; but the right of final rejection of the work will not be waived at any time. Upon all technical questions concerning the execution of the work, in accordance with the specifications and measurement thereof, the decision of the engineer shall be final. Ordinarily, one inspector will be employed by the District of Columbia for each section of the work under contract; but if, on account of any apparent disregard of the specifications, additional inspectors should be required, they shall be employed by the District of Columbia, at a rate of not to exceed \$4.50 per diem each, and the cost of same will be charged to the contractor.

8. *Condemned work.*—All materials furnished and work done not in accordance with these specifications shall be removed within twenty-four hours after written notice from the engineer by and at the expense of the contractor, or, in case of failure to do so, it shall be removed by the District of Columbia and the cost thereof charged to the contractor and deducted from the amount due or which may become due him. None but the best material of the several descriptions shall be used.

9. *District material.*—No materials furnished by the District shall be applied to any other use, public or private, than that for which they are issued to the contractor. The contractor will be held responsible for all materials delivered to him upon requisition, and shall be charged for all materials delivered upon said requisition. Should the amount of materials actually delivered exceed the amount used upon the work, the cost to the District of the difference must be made good by the contractor, and will be deducted from any moneys which may be due him.

Any material that is the property of the District that is not accounted for by the contractor will be charged against him at the contract price for similar material.

10. *Failure.*—If the contractor shall delay or fail to commence with the delivery of the material or the performance of the work as specified herein, or shall, in the judgment of the Commissioners of the District of Columbia, fail to prosecute faithfully and diligently the work in accordance with the specifications and requirements of this contract, then in either case the said commissioners shall have the power to annul this contract by giving notice in writing to that effect to the contractor, and upon the giving of such notice all payments to the contractor under this contract shall cease, and all money or reserved percentage due or to become due thereunder shall be retained by the said commissioners until the final completion and acceptance of the work herein stipulated to be done; and the said commissioners shall have the right to recover from the contractor whatever sums may be expended by the District of Columbia in completing the said contract in excess of the price herein stipulated to be paid the contractor for completing the same, and also all costs of inspection and superintendence, including all necessary traveling expenses connected therewith, incurred by the said District of Columbia, in excess of those payable by the said District of Columbia during the period herein allowed for the completion of the contract by the contractor, and the said commissioners may deduct all the above-mentioned sums out of or from the money or reserved percentage retained as aforesaid; and upon the giving of the said notice the said commissioners shall be authorized to proceed to secure the performance of the work or delivery of the materials, by contract or otherwise, in accordance with law.

11. *Extra work.*—The contractor must be prepared to do any extra work that may be ordered in writing by the engineer arising out of any modification of these specifications that may appear necessary, and for this he will be paid at current rates for work of similar character; or, if the extra work should be of a class for which no rate is fixed by current contracts, the actual reasonable cost to the contractor, as determined by the engineer, plus 15 per cent, the contractor shall have no claim for compensation for extra work unless the same is ordered in writing by the engineer. All additional and extra work shall conform to current District of Columbia specifications therefor.

12. *Conveniences.*—Necessary conveniences, properly secluded from public observation, shall be constructed whenever needed for the use of the laborers on the work.

13. *Cleaning up.*—On the completion of the work it shall be thoroughly cleaned up before it will be accepted.

14. *Lines.*—All necessary lines and levels will be given by the engineer by means of suitable marks, and in establishing them the contractor shall provide such materials and assistance as may be required by the engineer. All marks given are to be carefully preserved, and if destroyed through carelessness the cost of replacing them shall be charged against the contractor at a fixed price of \$2 for each point, to be deducted from any money found due at final settlement.

15. All loss or damage due to negligence or arising out of the nature of the work to be done, or from any unforeseen or unusual obstructions or difficulties which may be encountered in the prosecution of the same or from the action of the elements, will be sustained by the contractors.

16. *Interpretation.*—Any doubt as to the meaning of these specifications will be explained by the engineer who shall have the right to correct any errors or omissions in them when such correction is necessary for the proper fulfillment of their intention. Whenever the word "Commissioners" is used in these specifications, it is understood to designate the Commissioners of the District of Columbia. Whenever the word "engineer" is used, it is understood to designate the Engineer Commissioner of the District of Columbia, or, in his absence, his duly appointed assistants, assistant engineers, and inspectors representing him, limited by the special duties intrusted to them.

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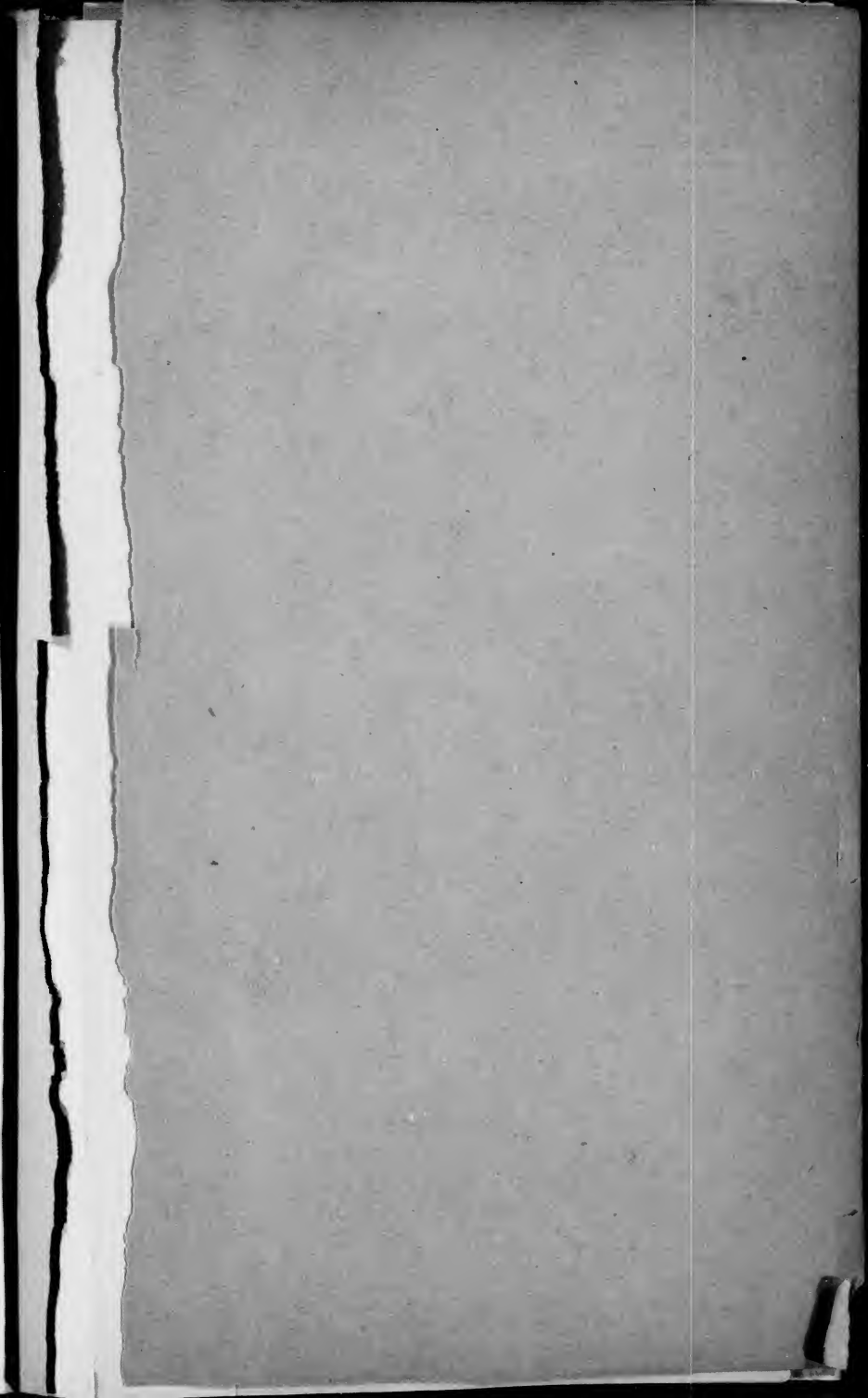
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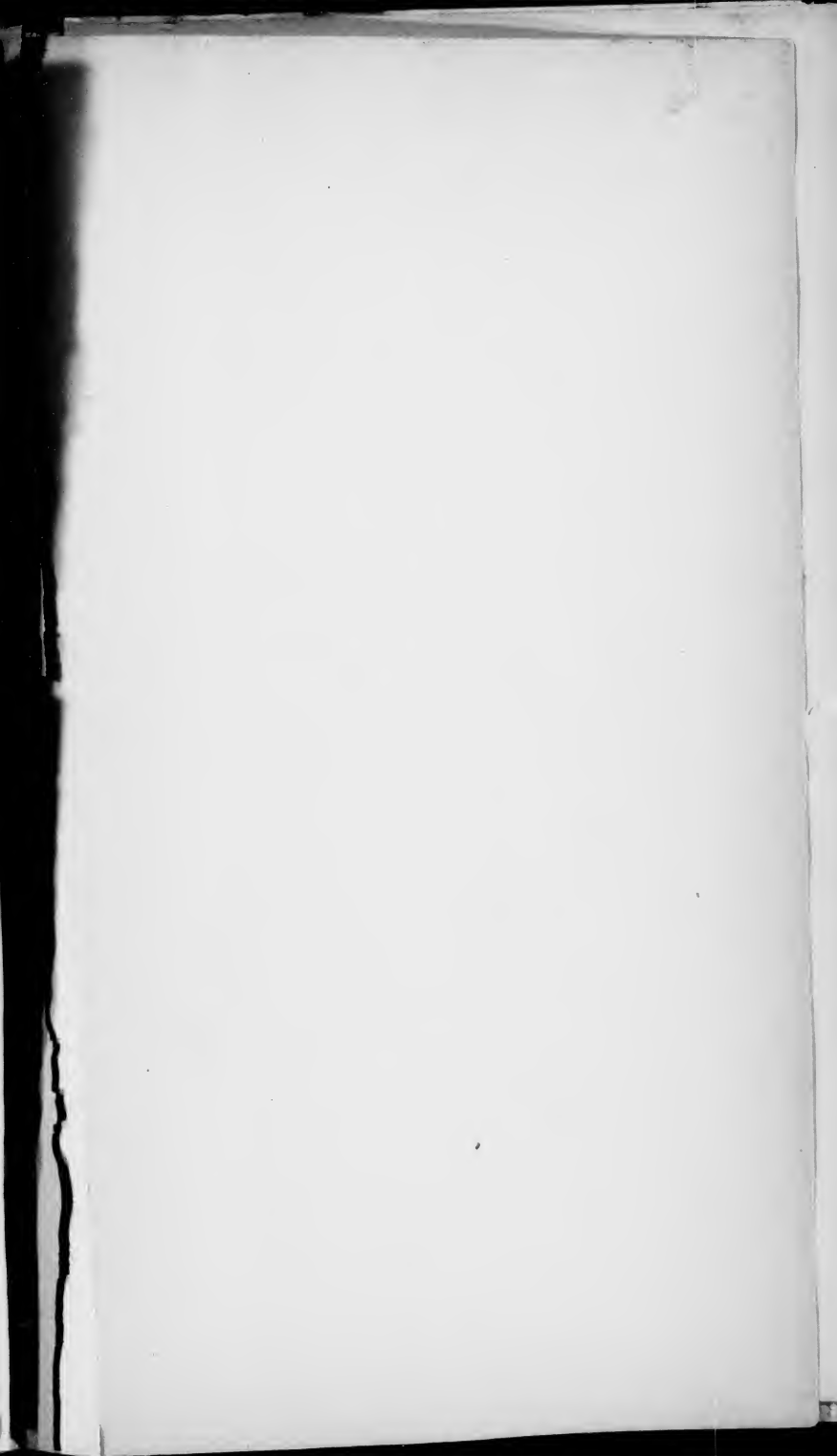
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